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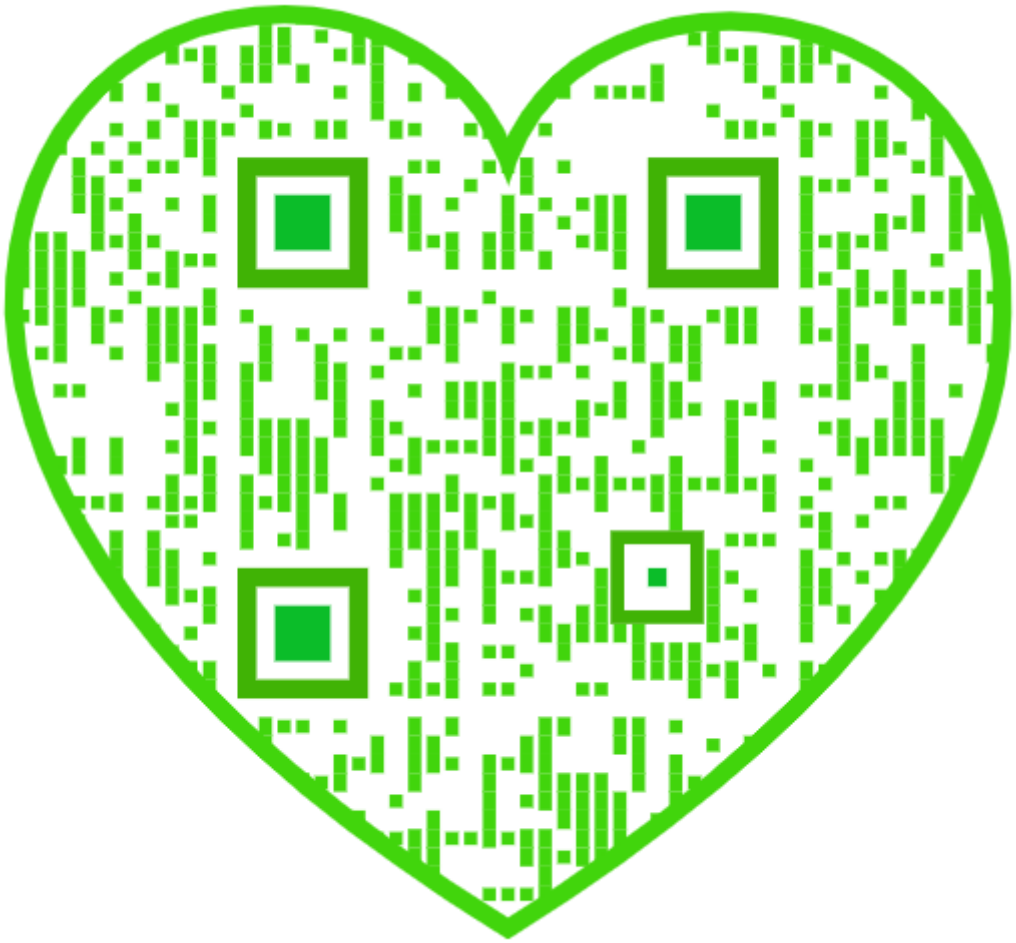

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PRINCIPLES IN TEACHING.

BY

J. T. GAINES.

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EDITORIAL COMMITTEE'S CERTIFICATE.

The undersigned, having been appointed a committee to report on *Principles in Teaching*, by J. T. Gaines, unanimously recommend its publication.

John Burke,
R. M. Mitchell,
C. G. Hammond,
E. W. Weaver.

PREFACE

The principles of teaching formulated in the last chapter of this monograph are substantially the same as those announced as postulates in PEDAGOGICS: A NEW THEORY *and Practice in Teaching Intellect and Character*, published about a year ago by Allen & Gaines.

I wish here to acknowledge obligations to Col. R. D. Allen, of Louisville Millitary Academy, for much assistance he has given me in the preparation of this work.

The illustrative lessons given in the body of the work are faithful descriptions of actual lessons, or series of lessons given in the school room, in so far, as a direction to do, can be a description of something done.

For errors in style or language I must beg the indulgence of my readers. It is impossible to put one's ideas in writing so that they will be understood by a reader, unless both reader and writer have the same motive in looking at the subject discussed, and look at it also from the same point of view. Knowing this and believing that the great majority of my readers would differ with me, perhaps, if I announced my positions in a formal way at the outset, as is usual in such treatises as this, and that, therefore, my task would be less difficult if I should "put the cart before the horse," I have done so, and asked them to experiment under my directions just as a teacher does with children, reaching the conclusion I do with me at the end.

Desiring to get into as confidential relations as possible with my readers, I have written the entire work in the first person.

THE AUTHOR.

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INTRODUCTION.

This monograph is intended to answer the question, "What is teaching?" in a practical way. It was written to help young teachers to understand how they may interest children in school work, how they may insure development in every one under their charge, and how they may make what they do in giving lessons to children, bear fruit in the characters of those children, which characters are all the time developing under their hands.

But while it is intended primarily as has been stated to benefit young teachers, it is thought that it will also serve to systematize the knowledge derived from years of experience. "We learn to do by doing." Experience is necessary to make a good teacher, but it is not every one who is competent to observe properly the details of his own work, and to make the proper inferences from them for principles to guide his future work.

The illustrations given in this work are given as a study for all. The old teacher will perhaps recognize in them lessons he has given from time to time. The young teacher if he wishes to read this monograph with profit, *must* experiment by giving the lessons suggested. In no other way will it be possible to make the *observations* and *comparisons* that will be suggested. In no other way can the inexperienced reader put himself in position for *assimilating* any proper principle for teaching. In accordance with true inductive teaching, the principles advocated will be announced last. In fact the whole work is planned as a series of inductions, by which the reader if he performs the experiments suggested, and gives the lessons incorporated as part of the treatise, will be led to make the assimilations announced as principles in the closing chapter.

PRINCIPLES IN TEACHING.

CHAPTER I.

WHAT IS A PRINCIPLE?

THERE are principles in every science and teaching is now called a science. Is it a science with you, my reader? Have you observed your own work and the work of others so well that you know exactly what to do as teacher in every case, in order that your pupils may be able to grasp an idea unknown to them? If not, then you are not a scientific teacher, but an experimenter. We are all experimenters at first, and doubtless all make blunders. He who perceives his blunders and changes his methods will become a scientific teacher, he who is blind to his mistakes will remain an experimenter. Young teachers are generally experimenters: it is to be hoped that all the young teachers who read this monograph desire to become experts and not to remain experimenters.

This treatise is written for the benefit of all, both young and old, who, knowing they have faults, desire to correct them. Are you willing to learn? Then (1) read, (2) conduct the experiments suggested, (3) compare with former experiences of your own, with what you have heard experts say in institutes, and with what you have read in books or papers heretofore. Do this and you will be able to formulate principles of teaching for yourself.

My aim is to convince the understanding of my readers, rather than have them take my advice unquestioned.

And now to begin at the foundation, let us ascertain if we can what a principle is.

You have read about the Charter Oak; have you ever heard or read anything about its roots, or its leaves, or its trunk, or its bark? Did it have these? You are prepared to say, certainly it had; without doubt you can picture to yourself the oak as it stood, trunk upright and tall, leaves and branches swayed by the breezes, and roots spreading from the base taking a firm hold in the soil. When I ask you why, you are ready with the answer, "Every tree has leaves, branches, roots, bark and a trunk."

Your answer in this case is a principle formulated. How did you arrive at the knowledge originally? Did some one tell it to you, and did you learn it by heart, or did you arrive at it through observations made by your own senses?

It is clear that you learned the truth formulated above through your own observations; now what things did you observe? Were they not trees? Was it not the likeness in all the trees you encountered that impressed itself upon you and caused you to assimilate the truth noted above?

Right here, before further investigation, a little digression is necessary, in order to make clear what telling is, and what things can and ought to be told. Some one originally must have told you that an object present to your senses was a tree. After that you were able to call other objects that resembled it trees, without being told. In order to be able to call others by the same name you must have detected points of resemblance in the various trees you encountered. These resemblances as discovered needed names in order to retention by your mind. You no doubt asked from time to time for their names, or bearing them in mind, noticed what people called them and thus learned the names without direct questioning. Somebody told you the names of the parts of a tree, no one told you that they were parts; no one could have told you that.

After learning (assimilating) the truth above, you tried to impart your knowledge to your mother perhaps. She understood you and corrected your lisping utterance, put it perhaps into another idiom; she told you what to say and in what order to say it. Or again, you bore your truth in mind until such time as you heard some older person give expression to a similar truth, and noticing his form and copying it you were able to voice yours.

Again, after you had gone to school and had learned to write, your teacher one day asked you to write about a tree. You wrote out what is stated above not in that form—you doubtless left out the commas and put in *ands*, you spelled some of the words wrong perhaps. Your teacher *told* you—no; he had to *show* you by giving you his copy to compare with yours—where to put commas, how to write words you had misspelled, etc. He did not tell you the truth learned; no one could tell you that.

But to return to our investigation about principles. If I were to say in your hearing that I had seen Charter Oak in full leaf and bearing acorns in January, would you not pronounce the statement false? And why? Because oaks in New England drop their leaves and acorns in autumn. Another principle this is; how did you assimilate it? Somebody, we will say, after you had reached the age when you had learned to give a meaning to certain forms of expression irrespective of their separate words, i. e., you could say for certain, knowing the meaning of *drop* and *their*, and not knowing the meaning of *leaves* and *oaks*, that something had dropped that was an essential part of the other unknown thing. Somebody, then, after you were acquainted with all the elementary facts in this principle, unrelated to each other, in your hearing let out the expression above. Attaching a meaning to the *idiom* or exact relation of the words, then you were able to comprehend what he meant, or, to speak more strictly, you were able to coin a meaning for yourself, Had you at this stage assimilated the principle? I would say not. You were no doubt inclined to receive it as truth, but it needed proof. You doubtless reserved judgment on it. You bore it in mind until your eyes proved it true; *no one can tell a principle to another.*

Now lay aside this chapter you are reading and pause to think and experiment. Do you yet clearly understand what a principle is? and how you assimilate them? and

how necessary they are in understanding what we read? and how much aid they give us in learning other principles? and how useful they are to us in enabling us to separate wheat from chaff in our studies? If you can give the required answer to these questions, if you can say yes to all these, then you are ready to sigh and say: "Oh, I wish that my teacher had given me more principles and less detached facts to learn."

But you are not ready yet to take up the threads of this argument. Here is another experiment for you: write out a half dozen principles you have learned—not memorized ones that you are yet taking on faith—but real *bona fide* principles that you learned originally without a teacher, or that you have proven by observation since you learned to "parrot" them in school. Write out one in the science of reading (learning to read), one in spelling, one in geography, one in grammar, one in arithmetic and one in physiology.

* * * *

Well, how did you succeed? It was a sad jumble at first, was it not? Now for another experiment: Take your six principles and recall the process by which you arrived at the truth in each. Hold your attention to this task till you recall the minute details of each experience. They are all in memory and will come back if you call for them long enough. Then compare the six experiences one with another, and each with all, and answer the following questions about each:

Did you have to observe *more than one* object in order to arrive at your conclusion in each case? Is your conclusion the expression of a *resemblance* that you have perceived as adhering to each of the objects observed?

* * * *

Now if you have faithfully observed directions and find that your answer is affirmative to both questions above, then you do know what a principle is, and I think if you will try you can write a fair definition of it.

But I have one other experiment for you before attempting to elucidate any principle for teaching which as its title indicates is the purpose of this treatise.

The experiment is this: Formulate i. e., write out your definition of principle, and open your text books. Take the principles therein set forth in the form of rules, definitions, remarks, notes, etc., and test a hundred or more of them by your definition. This will be a good experiment for you, as it will serve to make you know well what you have learned.

CHAPTER II.

FUNCTIONS AND EVOLUTION OF PRINCIPLES.

FROM the preceding chapter of this treatise those who have read it carefully, especially if they have performed the experi- suggested, are prepared to grant that a principle inheres in every habitual action and in the evolution of every created thing.

Men and trees stand erect; why? If we can understand one, the other is explained by the same law.

A workman builds a house; he patterns it in all its essential parts after similar parts of houses that already exist; he follows a principle.

A child gives expression to a

thought—originates a sentence, we say; he only constructs, as does the carpenter in building the house; The words he uses like the doors, windows, walls and other parts of the house are similar to others already in use. He but fits them to a plan as does the carpenter. That skeleton plan, the idiom in which he chooses to express himself, is the principle upon which he builds. Without it he must stand mute, as the carpenter must stand idle till he forms his plan.

Principles become rules for action; originate it in a certain sense. Like the wind to the sail, like the water to the wheel, like the spring to the watch, so is the principle to action. The boat, the wheel, the watch stand idle till the wind, the water and the spring put them in motion. So the tongue is mute, the senses are listless, the body is inert, action is delayed till the will chooses a principle.

Law governs and directs in the smallest things as in the greatest; the fall of a sparrow and the circling of the spheres are alike under the supervision of that one Intelligence that pervades the universe, that creates laws.

The truth of what has been elaborated above will not be apparent except to those who have given much thought and observation to the causes of things. He who has had the same thoughts I have expressed will understand what I have written, he who has not investigated already must do so now in order to understand the relations of principle to action, which is the objective point I hope to reach with all my readers. Without clearly understanding these relations no one need ever expect to become a true teacher. He who remains in ignorance of them will toil as an artisan to the end. His being will never thrill with the emotions the artist feels in contemplating his work.

I affirm that in all action, law or principle controls.

Action is used to include all doing. Voluntary and involuntary motion, and that subtle doing called thinking, of which we can hardly predicate motion, are alike included in its meaning.

Let us prove the truth by expeperiences common to all:

A human being wakes from sleep in the morning. He begins to meditate; memory brings yesterday with its failures and successes before him; the noises of the morning hour bring to-day into the presence of yesterday. Out of this hurly-burly of sensations there finally emerges into consciousness a definite, "I must," The awakened intellect has adopted a course of action, a rule, a principle, and movement is possible.

Need I illustrate farther? Is it not plain that all voluntary bodily actions are dictated by the mind in obedience to laws of its own enactment? There is an "I must" responsible for each and every action of our lives. Wheresoever one may go, into peril or into safety, into fortune or into poverty, he is ever led by his will in obedience to the regal command "I must," voiced by his judgment. Mistakes he may make, every one does so. The history of every life is but the record of a series of blunders. Success is won by correcting past errors, by adopting new principles for guidance.

* * * *

All this has been written with the end in view of getting my reader to think upon himself, upon his body, the slave of his will, upon his will, the slave of his passions and appetites, and upon his

royal intellect which can say to all these, "you must" and they obey. I have desired to awaken observation in detail as to how the every-day tasks of life are accomplished. If I have done so I think that each reader is now convinced that principle has all to do with life. But before going further it would be well to tell, if I can, what I mean by *principle.*

The mind controlling the movements of the body must continually be deciding what to do next. These deciding acts are based upon data which the mind holds. In each case the mind decides as it thinks best for itself. It makes a law for itself at every step. It says "I must," and then acts. Each "I must" is a principle if fully formulated.

The experience of generations of men record themselves in proverbs. These are chrystallized wisdom and are useful *principles* for guidance.

"A rolling stone gathers no moss," comprehended by a young man dictates an "I must" that puts him to gathering moss.

Now, whether my idea coincides with yours or not, my reader, as to what a principle is, I am very sure that you will agree that if every "I must," a boy may dictate to himself after he leaves school shall be truly for his temporal and eternal welfare, then he has been truly educated by his teacher.

Let us not quarrel over terms but get on to the real work of determining what to do with our boys and girls, and how to do it.

Every one wishes his boy to become a man of principle. What does it mean this time? Every one will agree in saying that it means he wishes him to become a man who will decide right and do right.

Now have we not reached by this answer the true end of education? I think so assuredly, and hence I desire to emphasize the importance of teaching principles rather than isolated facts in school. Every school task should have for its objective point the learning of some useful principle in ethics or science, just as every daily happening by adding to our store of experiences makes us year by year wiser and wiser if we learn the lessons they teach. If we learn! Alas! how many fail to profit by their experiences! Like foolish fish they nibble again at the hooks that just now wounded them.

One who fails to profit by his experiences has been poorly educated. Does school teaching have anything to do with making a person profit by his experiences? It ought to, my reader, more than it does, it grieves me to say, because teachers teach too little by principle and too few of principles.

Whether man was created just as he is or whether he has by degrees progressed to his present regal position among animals, it is nevertheless true that he is capable of yet further development, especially in his moral nature.

Cotton Mather would be deposed from the ministry to-day in New England, and a proposition to re-enslave the blacks would be shocking to the sensibilities of the Southern people. These facts show that we are even now progressing in our moral judgments. Principles that dictated our acts a generation ago are rejected or modified now.

But who is it that improves? Is it not he who uses his whole mental power in discovering truth? Is it not he who has been trained to perceive, to compare, and to deduce?

Mental decipline makes the successful, the progressive man; this the school is designed to give. Does it fulfill the end for which it was established? Every boy goes to school; does every boy leave school better equipped to make good use of his experiences? If he does not then the school itself needs to profit by its blunders, to amend its principles.

As the title of this chapter indicates, I have intended to discuss "the functions and evolution of principles." My discussion of the functions is ended. I have demonstrated to my own satisfaction if not to yours that the human will acts under self-enacted law at all times, and hence that all teaching should be aimed at exercising those powers of the mind which lead to proverb-making, or what the psychologists would call perceiving the general in the particular.

I must yet discuss the evolution of a principle in the mind. And in order to understand what I shall say, it will be necessary for my readers to experiment a little.

Take this old saw, "The early bird catches the worm," or Shakespere's, "Who steals my purse steals trash," etc., etc. Or take some other example of condensed wisdom. Meditate upon it until you are thoroughly possessed of *an* idea.

It may or may not be, more than likely it is not, the idea the author had when he wrote it; did this notion ever occur to you before?

Ask yourself what you know about it. After determining exactly what you do know, then ask your memory to recall the facts that contributed to that knowledge. Then (and this is the important point), please note if all the facts or particulars are not in your own experiences. Not in what you have read or been told, but in your seeing and feeling and smelling and tasting and hearing experiences.

I am assured that experience is the true teacher, because when I have traced back my working knowledge to its sources, in every case I have found it to be based on my individual experiences. I have years ago quit trying to teach "by precept and by example." I use precept still, not as a truth to be obeyed, but as something worthy of a test. I once said, "You must not swear, it degrades you in the eyes of men," and expected my pupil to believe it and obey it. Now I say, "I think if you will notice in what esteem a swearer is held by all good people that you will not dare to indulge in it."

I add one remark right here upon the "example" question before taking up the main discussion. One of the most impressive experiences that contributed to the formation in my own mind of the resolve, "I must not be a drunkard," was the spectacle of my own teacher drunk. I am sure that the evil "example" for which he lost his place wrought good in me. I hope no one will think I am advising any teacher to get drunk in order to make sober men of his boys. I hope every teacher will remain sober not as an "example" to the boys but for his own sake.

I hold that all our working principles are deduced from our experiences. They are subject to constant modifications as new experiences indicate a more perfect rule. I once hunted a hard place to sleep on, now I prefer a soft bed. I once bought a horse without examining his eyes, now I take a good look at them. Once I used to multiply

by 3 twice and divide by it once and add the three results to find 33½ per cent., now I have discovered a much simpler way.

Once I used to write qts. for quarts, now I am content with qt. Once I cured my colds by taking a cold bath, now I could not risk such a remedy.

Shall I go on multiplying examples of application of principles? Have I not given enough to indicate that all we do under the dominion of intellect is shaped by what we have done before, and is corrected continually by the influences of new experiences? What is manual skill but a perfected rule of execution? What is intellectual power but bringing phenomena into order? What is moral excellence but obedience to the dictates of wisdom? We work, we think, and we behave by rule if we are truly educated. Can I venture to close this paragraph by announcing a principle which I trust your experiences will enable you to approve? You must:

Arrange a full set of working principles for your pupils and bring about experiences that will enable them to grasp them.

In the next chapter but one to this, practical lessons will be begun for you to experiment with. Before taking up this actual "getting experience" for yourself, I would earnestly recommend that you read again from the beginning to this point. And I would urge upon you the importance of experimenting with yourself by trying to arrange a set of working principles, in one branch of study at least, before reading farther. A working principle is a judgment upon observations of detached but related happenings. It is a demand so well learned that the will obeys it without question—automatically in fact. It is a rule that we rarely put into words; children as well as grown folks are guided by working principles in all their habitual actions. I once heard a little girl say to her brother, "The next time I cry and get ginger bread, I won't give you any!" Who can assert that that little girl had not an effective rule for getting ginger bread? If asked how to get it she would undoubtedly have answered, "I must cry for it."

And so the boy who knows how to write must possess the knowledge —founded on experience—which is the equivalent of saying: "I must dot my i's and cross my t's, I must make my t's and d's twice as high as my m's, and my l's and h's three times as high, I must commence every word on the line and end it at the height of my m's, I must begin each word vertically underneath the end of the preceding one, I must slant my letters uniformally, and I must connect my letters." This he must know and more besides, and know it so well that his will obeys automatically. It might be possible to get him to formulate his rules, but would he remember them any better for that? My teacher made me learn a lot of "why's" once as a preparation for parsing a noun, and made me repeat them to him. But I did not use them nor have I ever formulated those I use to-day. I learned *my* rules for parsing under that very teacher by listening to a boy named Baker, who knew how to parse already.

I am sure that many valuable hours are wasted in requiring children to repeat definitions and rules, which are dead letters to them, simply because it is against nature to expect to engraft a truth as a working principle in any other way

than through observations by the child, of his own experiences. The teacher can, and must if he succeeds, decide what are the principles belonging to any science in which he is training the intellect of his pupil. Knowing this to be an imperative essential to success with every one who teaches, and knowing moreover how prone teachers are to run in ruts, I desire to emphasize this in order to jostle you up a little, by forcing you to get on the boy's side of the fence, and see your work as he sees it.

CHAPTER III.

DIRECTING A PRINCIPLE IN ITS EVOLUTION.

IN the preceding chapter to this I discussed at some length the functions and evolution of principles. Principles as guides were claimed to be necessary to all doing and the fact that they are born in the intellect of personal experiences was emphasized.

Now, if my readers are willing to grant the truth of these foundation propositions, they will not dissent from what I am going to say now, nor will they object to the illustrations I shall give of the teacher's work in causing a principle to take root in the mind of a pupil. I do not expect general assent to the propositions above because I see every day violations of them in practice. I am willing to grant that some who violate them do so blindly, and this is the class I am seeking to help. Others are joined to their idols and I can not hope to reach them. When I hear a teacher *telling* his pupils over and over how to divide, how to add, how to tell whether a noun is in this or that case, how to use his voice in reading, how to form his letters in writing, in fact how everything is to be done, I feel sure if he has been doing so a number of years that it will be almost impossible to convince him that another is a better way for his pupil's welfare, which task I have set for myself to accomplish with that class of my readers who are young in experience and confessedly inexpert as to the influence of methods in educating.

To understand clearly the lessons which follow, you must imagine yourself in front of your class at the threshold of a task that is new to them. It may be that they are to learn to use a new word, to learn to write from dictation, to learn multiplication, to learn a lesson in politeness, to learn to read a paragraph, to *do* in fact one of the multitude of little things teachers are continually requiring of their pupils. To do any one task as a single example in multiplication, or a single paragraph in reading *well* and *right*, will be a beginning of experiences to the pupil in that field of knowledge. Repetition of examples, (experiences) will in the end cause the how and why (principle) of that process to engraft itself in his mind.

Thus imagining yourself determines the fact that you must have arranged with yourself just what principle you were going to present at that lesson. Your having made a selection determines that you must have consulted in advance as to what the future welfare of your pupil requires, and that you have selected something for him to learn

that he will have frequent use for in his life.

Now, having determined your relations to the pupil and to the lesson contemplated, it is necessary to determine his relations to you, and to the lesson. In this case you must put yourself in his place in imagination. If you (the pupil) are to be benefited to the maximum by the lesson, are not all the powers of your intellect to be exercised during its progress? Are you not to have opportunities to observe, to compare, and to judge? If these are afforded you at each lesson, will it not be easy for you to hold your attention to the task set by the teacher? Will your mind not remain throughout in that reflective state which will evolve an "I must" as the result of your labors? Will you, if these necessary condition are fulfilled by your teacher, have any more difficulty in remembering the experiences of a lesson than in recalling the incidents and scenes of an afternoon ramble?

In my opinion no teaching effort can be in any great degree successful unless the teacher understands clearly the attitude of the pupil to the thing to be learned, which attitude I have attempted to outline by the questions above. Another point needs to be emphasized. It is this: *The first step taken by a pupil in learning a new principle must itself be dictated by a principle already learned.* I said in a former chapter that in all action law or principle controls, and I hold that it applies to first steps as well as advanced steps. I have sometimes thought that a child inherits the principle of imitation. At an age which psychologists are hardly willing to grant that his reason is developed at all his willful actions show that he says to himself, "I can safely venture to do this and I must refrain from that because my mother and father, and brothers and sisters, who are like me, do these things or refrain from those."

This is a working principle with every child, and in some form it is the motive power that inclines his will to go about his school tasks.

As preliminary to the lessons I shall give I wish to show by an experiment that there are certain working principles belonging to each department of school instruction without a thorough drill in which there can be no assured excellence.

Dictate to any one who is able to write it correctly the following sentence: "*A little boy threw his sister Mary's hat on the floor.*" Examine the result as to the number of principles applied in its execution. Many children less than ten years old could successfully accomplish the task of writing it correctly. Now does doing this not require a knowledge of all the principles indicated in monologue form below, and perhaps others?

"I must[1] begin it with a capital letter and[2] end it with a period. I must[3] begin the name Mary with a capital, and[4] place the (') apostrophe and *s* after it. I must[5] make the *l*'s, *b*'s, *h*'s, *y*'s, three times as long as the *a*'s, *o*'s, *n*'s, etc. I must[6] make the *t*'s, and *d*'s extend twice, as high as the small letters. I must[7] commence each word at the base line, and[8] end it at the height of the small letters. I must[9] begin each word on the base line vertically under the close of the preceding word. I must[10] use the form "threw" and not the regular form to tell the fact."

I claim that a proper application

of the teacher's art will cause the pupil to acquire these working principles by completely exercising the powers of his intellect. Any practice that falls short of thus exercising his powers fails to develop his intellect, and thereby makes it possible for him to forget much of what he has seemed to learn.

There are two plans to pursue: One is to tell the pupil a principle, the other is to cause him to discover it by applying the powers of his intellect to experiences that his teacher contrives for him, The one course leaves him timid, uncertain, and vacillating in their application, the other makes him confident and bold in execution. The one course stunts him, the other promotes his intellectual growth.

I have spoken above of "completely exercising the powers of a child's intellect." Some explanation will be necessary to enable all to understand clearly my meaning. The intellect of man is by all psychologists asserted to have various powers. These are graded as minor and major powers, or as inferior and superior. Many classifications are given, some writers having more powers embraced in their schemes than others.

But while these disagreements appear in defining and classifying the separate powers of the intellect, there is agreement by all in saying that the intellect is a unit. Now whether it has one or a dozen powers it is certain that the whole intellect must be exercised daily, in order that a healthy growth be kept up. If one organ or one part of an organ be not exercised, atrophy or disease results. So if one power of the intellect be not continually exercised, it must become weak, and symmetrical growth be prevented.

It follows then that lessons to be healthful must exercise *all* the powers of the intellect, be they one or twenty.

In this regard a teacher should take as his guide the dealings of mother nature with her children. She gives them lessons during all their waking hours, lessons that are of great utility too.

Perils of all kinds compass a man about from his cradle to his grave, perils of poisoning, of drowning, of being crushed, of contagion, of fire, and of countless others. Yet he learns to take care of his life amid a thousand threatening dangers. And he learns it all with no other teacher, save that good mother who endowed him with mental powers sufficient to observe his environment, to remember the effects of certain actions, to decide what is best for himself.

His education goes on while he lives. Each day he sees new objects, each day he makes new rules, or amends old ones. In nature's school there are no inattentive pupils, neither is there any learning of definitions there.

If a teacher would model after nature, he must study her method closely. What are the prominent points in that method?

First:—Her pupils are free to do as they will, that is, they are enticed not driven to exercise their intellectual powers. A little child *learns to walk* while taking excursions in pursuit of enticing objects. A boy *learns to plow* while pursuing the end of providing good things to eat and wear in the future, for himself and those he loves.

Second:—Her lessons invariably end in *making a law and obeying it automatically*. The falls and bruises a little child experiences, make impressions more lasting on his intel-

lect than on his body. He compares his various mishaps, and safe ventures one with the other, strikes an average, learns to rise, to stand erect and to walk.

The plowboy's tired limbs, and wrenched joints the first day he undertakes the task of steering Dobbin, are thought objects in his memory the next day. He willingly the next day observes how the older plowmen do. He tries and succeeds. He makes a rule for plowing, and later can plow and chat meanwhile with his comrades to beguile the weary hours till noon.

LASTLY: Nature never intimates to a pupil what she is going to teach him at any lesson. Nature says to the infant, "Come, enjoy these pretty things," and lo! the little one learns to walk. So nature speaking through the father says, "Son, we need your help to get in the crop, hitch Dobbin to the plow." The boy goes forth to help his father provide for the family, and lo! he *learns to plow.*

Is it too much to say that the school's methods should conform to nature's in these essential points? Can a class of children be taught and their wills be left free? That is, can an adequate motive be provided to induce them to willingly exercise their intellects in any field of investigation chosen by the teacher? Can a course of lessons be provided in school that will end as nature's lessons invariably do *in making rules and obeying them automatically?*

Can a teacher remain mute as nature does in giving lessons, and allow his pupils to find for themselves the precious jewels of truth towards which he guides them?

These things it seems to me are possible of accomplishment; such is my ideal of teaching. To teach a boy to read is to open for him the stored wisdom of centuries, to teach him geography is to insure him a comfortable living, to teach him arithmetic is to make him a mental athlete.

But to hold these great ends before him as the motive to spur him to effort would be wrong because he is yet a child and thinks as a child. He cares nothing for wisdom, because he knows nothing of it. He cares not for a living for he is well provided for. He cares nothing for intellectual skill, he dreams only of victories in wrestling, or running, or leaping, or climbing.

The great ends noted are the lessons the teacher must let him learn. He must put him to telling his experiences—ever an enticing task to a child—and thus lead him to wisdom's store house. He must appeal to his constructive faculty —every child is an inveterate builder of castles *en Espaque*—and to his restless desires to be ever on the go, to see all places, and to enjoy the wonders of nature, in order to induct him into a knowledge of the earth. He must put him to doing with his hands—every child has the desire to make things, every boy wants to find out how every thing is made—in order to ground him in the principles of arithmetic.

And so for every science in which it may be the teacher's lot to provide material for intellectual growth. There is a purpose in having the child take the given lessons in the given science. That purpose has to do with his future; it aims to prepare him for problems he is to conquer when a man. It cannot move his will *now* because he is yet a child. The teacher

must appeal to some motive that will set him in action, and let the great end to be accomplished come to him as all nature's teachings come, as a benign truth dictated to the *will* by the *intellect*, the latter having woven its structure out of the gathered up threads of experience.

CHAPTER IV.

ILLUSTRATIVE LESSONS. WORD TEACHING.

EXAMPLE 1. PROBLEM: TO TEACH A PUPIL THE PRINCIPLE (HOW) TO RETAIN A NEW WORD.

THE meaning and form of a new word are both to be remembered in order to make the knowledge available for future learning.

Direction 1. Suppose the first word to be *opposite*, and that its form is new. Place two things in a position which appears to *you* correct, and ask the pupil (or class) how one (touching it) is with the other. Whatever answers you get that are in any way descriptive of its position with reference to the other object, write them on the board and have your pupils write them on their slates. You will probably get such answers, as: (a) *near*, (b) *beyond*, (c) *this side of*, (d) *to one side of*, (e) *close to*, etc. Use your judgment as to which to record.

2. Inquire as words are given as to why the word was selected, or suggest to the class yourself why it was used, thus: "Mary said *near* because it is not far away. John said *beyond*, because to him it is that way. Henry said *close to*, because he sits far back in the room, etc."

3. Move one of the objects into the positions described by the following words, telling the word if the children do not suggest it. Write each new word in the group on the board: (f) *upon*, (g) *underneath*, (h) *over*, (i) *below, etc., etc.*

4. Change the objects to others having regular forms, as boxes, penholders, children, etc. Place the new objects in some of the positions already recorded. Record the changes suggested as new words. *Near* is very apt to become (j) *facing* and *beyond* become, (k) *behind* if children are used as objects.

5. Place two of the changed objects—as two children—in the positions, (l) *alongside*, (m) *facing*, (n) OPPOSITE, (o) *vis-a-vis*, etc., giving these terms to describe the positions as they are arranged in tableau, if they are not suggested by the children. Add each to the group on the board and have it copied on the slates.

6. This is thus far the work with one word. It will take ten or fifteen minutes to do this well at first. It will be noticed that it also teaches other words kindred in meaning to the one chosen. The next step is to take another word as *strikes* and do with it as with the first word.

For verbs it is better to present the participial form, as *striking*, *leaping*, *speaking*, etc., as this is the name form.

7. Continue the teaching with other words, as centers of groups, until the children show by their habits of work, that they have assimilated a rule or method of investigation and observation, for new words they meet in their readers and other text books.

Many groups will have been presented of which (*a*) *opposite*, (*b*) *striking*, (*c*) *beautiful*, (*d*) *calmly*, (*e*) *fossil*, etc., etc., are respectively the centers. My observation of word teaching shows that children need more or less of this drill every year, in order to establish good habits of study for the spelling and reading lessons.

The material for these lessons can be easily selected in advance. The teacher ought to have made full preparation when he comes before the class. Remember that the aim is not to make the child remember the particular words you select, and that come out incidentally, but that it is to fix a good habit of retentiveness. The proper test is not therefore to give him these words to spell, or define, or use in sentences, but to note his changed habits of work. If children form the habits of asking you for the meaning of words they hear you use, or that they meet in their books, if they ask how this or that word that they hear is spelled, and if they are frequently seen consulting the dictionary, you may be sure the leaven is working. They are assimilating, and it is now time to drop the lessons till such time as they need them again to re-establish habits.

Example II.

Problem: *To teach the principle that every word has a generic and many specific meanings according to circumstances.*

1. For this series of lessons select words of very general application and familiar in meaning to all in the class, for example; (*a*) *long*, (*b*) *good*, (*c*) *running*, (*d*) *mouth*, (*e*) *head*, (*f*) *flying*, *etc.*, *etc.*

2. Supposing the lesson to be upon *long*, write it upon the board, thus: LONG i. e., as a title is written, direct the children to copy it upon their slates. Now ask the children to name for you things that are *long*, and as answers are given write the phrases below the title, thus:

(*a*) a long rope.
(*b*) a long string.
(*c*) a long ruler.
(*d*) a long road.
etc., etc., etc.

3. When they cease giving answers or have given enough for the purpose, set up a comparison among the different uses of *long*. Ask for instance, "How long is a *long* rope? How much *longer* is it than a long string? Would a string as long as the ruler be a *long* string? What are you always thinking about when you use the term *long*?" Put two pencils together and have some one touch the *long* one, Now put it with another of greater length, and ask them to select the *long* one. What was *long* has become *short* by the comparison.

4. Having established the relative meaning that always attaches to words of this class, proceed to extend the horizon of specific meanings by such examples, as:

(*a'*)	a long	nose,
(*b'*)		breath,
(*c'*)		time,
(*d'*)		word,
(*e'*)		walk,
(*etc.*)		etc.

5. Set up a comparison among these meanings, and those of the first set in order to bring out the resemblance in meaning in all of them. The name of this resemblance is *length*, and its name should be given after its elements are discovered in the examples.

6. Continue the lessons with other words, such as those given under direction (1), as types.

The efficacy of these lessons will be proven if the children spend less time than before in conning their reading lessons. They should be continued till the idea is firmly fixed in the minds of the pupils that every word has a very general meaning, inside of which are myriads of special meanings. This is one of the working principles by which a child manages to assimilate meanings through the context. It prepares the pupil also to understand poetry; for what is true poetry, but using old terms in new applications, thus showing resemblances where the mind of the reader had not perceived them before? Notice in the following lines the special meanings given to the italicised words by the genius of the poet.

"Go forth to the *windy headland*,
Where the cypress-trees *look* down
Like *giants* aged and stricken,
Yet wearing the *green-wood crown*.

Mighty the *voices* that hail you
With the *lore* of olden time,
In the *chant* of the *marching* billows,
And *strong* boughs' answering chime."
(*Harper's Magazine.*)

There is hardly a word in the whole extract, but is familiar in one meaning to every third reader child; how many of them could realize the stirring picture the poet has drawn? When your pupils readily get the meaning of such readings, it is a sure sign that your work with this principle is bearing fruit.

EXAMPLE III.

PROBLEM: *To teach the principle that words are but signs of ideas.*

Much harm is occasionally done by giving children spelling lessons in words that are not symbols of ideas to them. Akin to this in evil effects is the practice of having children to recite definitions, and moral maxims, and gems of poetry. Printed lines become to these innocent victims merely representatives of certain vocal sounds. Such persecuted children rarely ever become readers of anything else than the trashiest books.

A child from the beginning ought to be forced to associate a meaning with every word he learns to write or pronounce. Follow the directions below till you have shown him the symbols for the words in his speaking vocabulary, and he is pretty sure to *think* the principle formulated above.

1. Hold your knife in presence of the class and let it fall, ask what happened and write the answer on the board, the children copying on slates, thus:

(*a*) The knife fell.

2. Substitute a hat for the knife and in the same way get:

(*b*) The *hat* fell.

4. By asking "where" the latter becomes:

(*c*) The hat fell *on the table.*

5. By substitutions and questions other changes can be made, as below, to any extent that may be desired.

(*d*) The hat *lies* on the table.

(*e*) The *ball* lies on the table.

(*A*) (*f*) The ball *rolls off* the table.

(*g*) The ball *strikes* the floor.

(*h*) The *chair* strikes the *wall.*

(*i*) The chair *stands near* the wall.

etc., etc., etc., etc.

6. Another example is given below of a lesson that can be easily improvised with even very young children.

(*a*) John is a little boy. (*b*) He is not much taller than a chair. (*c*) When he stands by the teacher his head just reaches to the teacher's elbow. (*d*) If he (*B*) wants to write his name on the roll of honor, he has to stand in a chair. (*e*) He has curly hair, and blue eyes. (*f*) His shoes are always blacked, and his clothes brushed when he comes to school, (*g*) etc., etc., etc., etc.

7. Other exercises can be contrived by an ingenious teacher to serve the same end, this for instance: Let the children go to the window and look out. Tell them to observe everything that is taking place. Let them compare observations freely. Help them with hints yourself. Ask them to resume their seats and then sentence by sentence, record what has been seen as if one person had witnessed it, and was telling it.

"One day at school the teacher let me go to the window. I looked out and saw *so* many thing. A

brisk wind was blowing and the trees were bending as if they
(C) would break off. Leaves were loosened by the wind and were flying everywhere. Dark heavy clouds were drifting overhead, and while I stood there a shower fell. It was funny to see the people running to shelter from the rain. etc., etc., etc., etc.

EXAMPLE IV.

PROBLEM: *To teach the principle (rule for changes produced in meaning) of prefixes and suffixes.*

To give the children this knowledge as a working principle, a good many lessons are necessary, and careful outside preparation on the part of the teacher. In the High School course about five months is usually devoted to this work. But there is no reason why it cannot be as well done in the primary school. Its importance as affecting the work in all subjects in the grammar grades would justify its introduction. Any text book in etymology will be a good guide in arranging lessons.

1. Take some Latin root as *port*, write it on the board and have the children copy. Illustrate its meaning by action, asking the children to observe the action and name it in English. Put all the answers you recognize as synonyms on the board, thus:

(*a*) *port*—carry, bear, convey, move, etc.

2. Ask for words containing the root as the main syllable, as follows: When one *carries* merchandise *to* another country, what do we call his act? When he *brings* merchandise *into* our country, what is the name of the act? How do people carry goods *across* the sea, across the Andes? What is the act named in either case? When you *carry* my opinion home to your parents at the end of the session, what do you call the paper on which it is written? What is my act called? etc., etc.

As the words are found, [in many instances it will be necessary for the teacher to give them,] record them as below on the board, and have the children do likewise on their slates.

(*a*) *port*=carry, bear, convey, move, etc.

(*b*) *ex* port=to carry *out of* (goods.)

(*c*) im port=to carry *into* (goods.)

(*d*) trans port=to carry *across* or *over*.

(*e*) re port=a thing carried *back*.

(*f*) re port (*v*)=to take *back* a message.

(*g*) port er=*one who* carries or bears.

(*h*) re port er=*one who* bears messages *back*.

(*i*) im port er=*one who* brings (goods) into.

(*A*) (j) trans port (*n*)=a ship that bears loads *across*.

(*k*) trans port ing = carrying *across*.

(*l*) port age=*price of* bearing.

(*m*) port able=*that may be* carried.

(*n*) port ly=*like* one who carries or bears.

(*o*) con port = to bear oneself *like others*.

(*p*) sup port= to bear *from beneath* or *below*.

(*q*) sup port er=*one who* bears (supports) another.

(*r*) de port (*v*)=to convey (a person) *away*.

(*s*) de port ment=*the act of* behaving correctly *away from home*.

(*t*) sup port ed=carried as a load.

(*u*) re port ed=carried back.

I have given more examples than are necessary with any one root, in order to show how much

the vocabulary of any one may be increased by such lessons. It is not at all necessary to exhaust the list of derivatives in any case. Repetition of the same work with other roots will in the end fix the meaning of the principal prefixes and suffixes without memorizing.

3. Continue the work outlined with other roots and derivatives, as follows. Possible groups are suggested.

(*B*) *fer* or *lat*=bear, carry, etc.

Re fer, re late, trans fer, trans late, in fer, pre fer, of fer, re fer ring, trans lat ing, re lat ed, etc.

(*C*) *tract*=draw, etc.

Con tract, ex tract, re tract, track, tracking.

(*D*) *tend* or *tens*=stretch, bend, pull, etc.

Con tend, ex tens ive, tense ly, tend ing, at tend ing, etc., etc.

CHAPTER V.

ILLUSTRATIVE LESSONS. READING AND SPELLING.

EXAMPLE 1. PROBLEM: TO TEACH THE PRINCIPLE HOW TO GET INFORMATION FROM PRINTED MATTER. [Rules for study.]

WHAT is popularly understood to be reading is treated in the next example to this. "Giving information by reading aloud," is the end we do wish to reach by teaching the art of reading to children, but to do it successfully one must first cause the child to learn a rule for "getting information" from the text.

I believe that a good guide for practice is never to ask a child to read for you any extract upon which his information is not full. Hence I begin by teaching him first how to get information, and then teach him how to tell it, using in the preliminary practice those sentences or extracts in which his information is full.

Follow the directions below varying the word matter to suit the grade of advancement of the class.

In writing up the directions I have in mind, a class of children advanced to the second reader, and who with a few exceptions were addicted to the "two-brothers-were-out-in-the field" habit, that sing-song word-calling, that one hears so much of in visiting primary classes.

1. Show an object to the class as a hat, and by action and question induce some one to name it. Write the name on the board and ask every one to do the same on his slate.

2. Do something with the hat, and get some one to tell what was done. Some difficulty will be experienced in this, but repeated trials will induce the child to adopt conventional forms of *telling*. Write the result on the board, and have it written on slates, thus:

(*a*) "The teacher showed us his hat."

3. Do other things or ask questions and get members of the class in turn to extend the narrative until you have a number of sentences, thus:

(*a*) "The teacher showed us his hat to-day. (*b*) It is a large high-crowned hat. (*c*) He tried it on Henry Smith's head. (*d*) It reached down over Henry's ears, and all the children laughed. (*e*) The teacher then tried to put it on Willie Jones, but he dodged. (*f*) The teacher then put the hat away."

In regular practice the next thing in order would be of course to have the children read

(aloud) the lesson, first from the board, and afterwards from their slates, but as that belongs to the work of the next example, it cannot of course be considered as one of these directions.

4. Repeat at different times the same routine, that is, take some object as a boy, a knife, a slate or a basket, and after the same plan used with the "hat," outline a lesson for reading aloud.

5. After three or four repetitions write up a lesson basing it on one of the previous lessons, but changing the idioms considerably, thus:

"One day Mr. Smith brought his hat in. It was a high crowned hat and too big for a boy. When he tried it on Henry Smith it hid his ears and eyes. When he wanted to try Willie Jones with it Willie held back. As the boys did not like that play the teacher put his hat away."

To this point it must be remembered that the children have been getting the information by using their senses. This direction (5) obliges them to rely on memory, and on their knowledge of the words and idioms before them, for their information. It is the half way step to victory. Direction (5) should never be attempted till the children read the improvised lessons naturally.

6. Let the children copy the lesson from the board on their slates before reading it.

7. Repeat with other lessons the work of directions (5) and (6), making the lessons to resemble less, and less the original types.

8. Make up a lesson following directions (1) to (4), containing important words in the next lesson they are to encounter in their reader. The following are taken from a lesson in the second reader, and below is a specimen of what may be done with them; tempt, chased, swerve, began, mowers, thrown, spokes, straight, meadow, breath.

"The teacher *began* a new game to-day. He *tempted* Johnnie with an apple, and had Johnnie chase him. They took pains to *swerve* just right in turning the corners. When Johnnie was out of *breath* he let him sit down. He then told us a story about *mowers* in a *meadow*. And another about why the *spokes* in a *wheel* ought to be made *straight*.

It is not important that all the words be woven into a consistent narrative. It is sometimes impracticable. The important point is to have the children get a sense impression if possible, for each new word to name before they open the text in which they are to find it.

9. If the idioms of a new lesson are too difficult, break them up by changes, thus:

"When their arms were full of the new hay, they chased each other round the field till they were both at last out of breath."

They filled their arms with the new hay. And chased each other round and round. At last they were both out of breath.

10. When these directions have been faithfully followed, the children can be safely trusted to "get their lessons," and it will be found that their ideas and habits resulting have been altered with reference to what "getting a lesson" means. But whenever the old habits return, repeat such of the drill as may be necessary.

11. When children can and do get information readily from most of the lessons assigned them, it often happens that they meet a lesson that refuses to yield its content. Investigation will show in such cases that the text is wanting in some one or more essential element necessary to make the concrete realization complete to a child. Such extracts as make no mention of the *place* or *time*, or that do not describe in some way the *persons* mentioned are difficult, because the child has not learned yet to supply these.

Some children of bright imaginations do not meet this difficulty, but with the majority it is a drawback.

To prepare them for "getting the contents" of such a lesson as has been described, inquire of them and record in detail.

(*a*) The time or times, as: "before noon," "after dinner," "the next day," etc., etc.

(*b*) The places omitted, "In the parlor," "on the road to town," "on the steps," "at the piano," "in the woods," etc., etc.

(*c*) The descriptions of persons, as, "tall," "about six years old," "blue calico apron," etc., etc.

(*d*) Any other particulars (imagined) necessary to make a good skeleton to study by. This skeleton can be usually supplied by reading over the lesson, pausing now and then as you read something about Mary or John or mother, to "wonder" *how* they looked, or were dressed, and *where* they were sitting or standing, and *when* all this happened and let the children decide.

EXAMPLE II.

PROBLEM: *To teach the principle how to give information by reading aloud.* [Rules for reading.]

The directions given below assume that the child *has* information to give. The teacher must have dealt with him as suggested in Example I, and have given him an opportunity to "get" his lesson. But it nearly always happens that some have been inattentive or idle while they ought to have been studying, and hence it is better to put into the reading lesson some work designed to perfect the knowledge they have acquired by conning the lesson over. The directions begin at the point where a child has not read at all.

1. Do something and induce some child to tell about it. Some such sentence as this will result:

(*a*) "The teacher came into the room."

Have this copied on the slates, and read from the board and slates by members of the class.

2. Vary the action producing such results as follow:

(*b*) "The teacher came in at the side door,"

(*c*) "He came in leading a little boy."

(*d*) "The boy went to the window and looked out."

(*e*) "The teacher then took a seat and beckoned to the boy to come to him."

(*f*) "He whispered to him, and the boy went rapidly out.

(*g*) He then pointed to the door, and stamped on the floor three times.

(*h*) While we were watching he opened the door, and there stood the boy with four hats on his head.

3. Continue day after day until the children have formed the habit of taking a whole sentence as a unit of utterance. It must be borne in mind that to this point the information has come wholly through the senses. Care must be taken also to make these lessons serve the purpose of bringing into the vocabulary of the children all of the verbs, adjectives, adverbs, and prepositions in every day use.

4. When a vocabulary of 200 or 300 words is learned, write up short lessons embracing such scenes as can be described by the words they know, thus:

"John stood at the window. He beckoned to me to come and look out. I looked and saw a man coming rapidly to the front door. When he turned in at the gate we listened and the bell rang loudly."

Let the children copy these carefully, and afterwards read them from the board and from their slates.

5. Introduce new words occasionally, waiting for the children to discover them, and inquire "what they say." If a new word is regular in its spelling, pronounce it slowly pointing to each letter as you give its phonetic sound. Or spell it with them in the way you have usually practiced them. This caution applies only to words that you think are in their speaking vocabulary. Words that are irregular in spelling, or that you know are strange to them should have their meanings enforced through sense impressions as was shown in a former chapter under "Word Teaching."

6. When the children through this practice have acquired the habit of reading not word by word, but sentence by sentence, when they also habitually make the attempt to help themselves out by spelling at new words, and listening to see if they know them, and when they ask promptly for the meaning of new words, they are ready for lessons in a book. Select a text for them to try that contains not many words that are strange to them. A half dozen or so to a page of the text can be easily prepared for, by as hort lesson embracing them, as illustrated in the last enample.

These directions assume that the teacher has taken the proper steps to change from script to print, viz; to print on the board lessons previously read in script and have them read in the new form. This soon accustoms the children to printed words.

7. Before having the first lesson read from the books, question it out sentence by sentence, thus:

Where did Johnnie Brown go one day? *John Brown went to see his grandmother one day.* Where did she live? *His grandmother lived in a small house about a mile from his home.* What was there near his grandmother's? *There was a deep pond not fa. from her cottage.*

The answers italicised above are the text of the child. His reading in response to the teacher's questions is a veritable *telling* of the story. When he reads it independently a little later it is still telling.

8. Continue to question out the sense of each lesson before reading it, until the children show by their habits of reading, that they have assimilated the idea that *reading is telling*.

9. If a lesson presents any unusual difficulty, prepare the children for it by reading it over for them yourself, pausing at the difficult passages, and "wondering" about them.

10. Long lessons (3 or 4 pages of text) would be better not divided, as is the usual practice of teachers. In lieu of that course, read the lesson yourself, the children following with books open. After reading have books closed, and by questioning get from the children a short abstract of the lesson. As the sentences of the abstract are derived, write them on the board and have the children write them on their slates. Have this read from the board and from the slates. After this the children will be better able to "get" the lesson.

Example III.

Problem: *To teach the working principle by which a pupil will be enabled to spell correctly.*

There are two habits characteristic of every good speller. One is that of looking closely at the sequence of the letters in a new word, the other is that of making a mental picture of every word before spelling it. To establish these

habits in a child is to give him a rule for spelling any and all words that he may need to use. Obedience to these habits is the working principle by which he spells his words.

Children trained to read after the method outlined in this chapter, will as a rule need no special spelling lessons, since the amount of word copying they have done, will usually be enough to have caused in them the formation of the spelling habit.

But many children do need special lessons, and frequent tests in order to issure success with them. Example 1, under "Word Teaching" is a kind of spelling lesson. Such lessons as are there recommended, are advised to fix the proper habit for learning the *meaning* of new words, and it is recommended for all. But its value as a spelling lesson is only incidental, since the exercise leads the child to compare meaningsmore than forms.

Much time is wasted in my opinion by teachers everywhere in needless spelling lessons. I have never given exceeding fifteen minutes a day to it when I taught a class, and have succeeded. I was led to this practice by recollecting how an old gentleman whose school I attended one term used to do.

He had "kept school" as it was called for forty years in one place. He had many eccentricities as a teacher, the most remarkable of which was his method in spelling.

We used the old "Blue-Back" as a matter of course, and every boy had to spell through it before he was allowed to take a reader. This was all oral and "on the book" as we called it. Those who were in reading classes—among whom I was numbered—were required to spell "off the book," the last thing before noon each day. Our lesson was the list of words of irregular spelling and pronunciation (about 4 pages in the back of the book.) It took about three days to finish the list, and then we spelled it again. Easy was'nt it? It had gone on 40 years before I joined the school, and continued two or three years longer—the old man died in the harness soon after—and the patrons were satisfied. And strange to say it made good spellers.

It required close observation to locate the letters in such combinations as *phthisic, hautboy and bdellium*, and great powers of imagination to picture one of them when pronounced, but we succeeded through many repetitions, and like the German student whose music master kept him practicing exercises till he could play at sight all music, so we in the end found ourselves able to fix the form of a new word at a glance. At least that was my experience.

Reflecting on this experience, and on the strange (?) fact that I had learned to spell at college thousands of Latin, and French, and German words without ever having taken a spelling lesson in either language, led me to conclude early in my career as a teacher, that quality in lessons and not quantity is what is needed to make good spellers.

Below follow directions for teaching the principle formulated above. It may be that a better selection of material for lessons may be made. I have followed the plan of taking words kindred in meaning for a lesson, because thereby the intellect of the learner is afforded full exercise.

1. Induce a pupil—by a whispered consultation or in some other convenient way—to pass before the

class asking them to give attention to what he does. When this is perceived and fully apprehended give the name *walking* to the action; write it upon the board and have it copied by the class on their slates or pads.

2. Induce another to imitate the first one with the difference that he shall take long steps. Have the class observe the action, and compare it with the [1]*walking*. If they have no name for that kind of walking, call it [2]*striding* and place it on the board along with *walking*, and have it copied on the slates or pads.

3. Induce others to vary the generic action in various ways. Compare each by its differences from the actions previously illustrated.

Be sure to have the comparing done before the name of the new action is given. [3]*Marching*, [4]*skipping*, [5]*crawling*, [6]*stumbling*, [7]*limping*, [8]*blundering*, [9]*wandering*, [10]*approaching*, [11]*retiring*, [12]*passing*, [13]*running*, [14]*hopping*, etc., may be added in a little while to the group on the board. The number it is advisable to take depends of course upon the advancement of the class and other circumstances. Three or four at least are necessary to give free exercise to the comparing powers of the children. Not more than fifteen minutes ought to be consumed in developing the group as outlined.

If time permits continue at once, but if not, then at some future time, by drawing out short statements from the children by appropriate questions, as follows:

1. I *limped* when I cut my foot with a piece of glass.

2. Henry *stumbled* because he *ran* too fast.

3. A boy *hops* on one foot but a bird hops on both feet.

4. Mary *approached* with the chalk and *retired* to her seat, etc., etc.

Write these sentences on the board and have them simultaneously copied on slates or pads.

In this exercise I have suggested enough work for about thirty minutes. "But," says one, "is that all? Are we not to have a *drill* on the new words in order to secure their retention?" I answer emphatically in the negative. It is just that course that makes listless and poor spellers out of many school children. With the material above I would have no further work. I would keep no list for Friday afternoon's spelling match or for any purpose except to test the children occasionally. But I would induce my children to preserve their work for reference if possible, in order to develop the necessity for using the dictionary or other authority when in doubt.

My drill consists of doing day after day the same thing as nearly as possible with other word material. For instance: [1]*Up*, [2]*down*, [3]*along*, [4]*over*, [5]*underneath*; [1]*Slowly*, [2]*hurriedly*, [3]*deliberately*, [4]*cautiously*; [1]*Beautiful*, [2]*pretty*, [3]*nice*, [4]*exquisite*, [5]*ugly*, [6]*homely*; *and* [1]*Hard*, [2]*soft*, [3]*firm*, [4]*adamantine*, [5]*mushy*, etc., are specimens of groups which can be easily treated after the manner of the outlined exercise above. Now let us see what is done by this method. First the pupil is led to spell once correctly a great many words. These words all name something to him at the time he spells them. His teacher invents a *use* for each word by a question, and he spells it again. He thinks of other uses for it and spells it mentally over and over. This goes on with him week after week. In the meantime his teacher has tes-

ted him by asking him occasionally to spell some word that he had three or four weeks before, and somebody else has had to help him spell it. He has seen numbers of his comrades caught and mortified in the same way. He has seen others invariably succeed when tested. He watches them (the ready spellers) and assimilates through comparing their ways with his own, the correct principle of how to be able to spell words when it is necessary. If he should write the principle out it would be somewhat like this: "Why these words the teacher makes us copy every day keep coming up. I find I want to use them very often. I must notice better how they are written so I won't have to look in my dictionary so often, and so I won't be mortified by not knowing how to spell one when I am asked to do so by my teacher or any one else."

To get your children in the frame of mind indicated by this monologue should be the end and aim of your work with them in teaching spelling. If I were the Czar of Russia, I would banish to Siberia every man who would prescribe lists of words for the teachers in my dominion to torture the children with. Moreover I would prescribe that the banished should be punished by being made to learn and recite twenty new words each day from a strange language, and *to go without their dinner* till they recite them correctly, as many children in our land are forced to do every day.

This exercise illustrates my ideal of how to teach spelling. I grant that it is not the conventional lesson at all, but years of experience has proven that it serves the purpose of making good spellers of children in the end, and at the same time assists the reading, the geography, and other lessons wonderfully. Moreover, they are interested and happy in their work which counts much in developing their characters.

CHAPTER VI.

ILLUSTRATIVE LESSONS. LANGUAGE.

AUTOMATIC writing is a necessity in order that a child's intellect may be free to exercise itself upon the material placed before it by the teacher, in the language lessons.

Early in a child's school life, then he ought to be led to assimilate those rules or principles for writing, which will enable him to transcribe what he knows "with neatness, legibility and despatch."

On page 15 I gave in monologue form the principal "I must's," that a child should practice automatically in order to write well.

Below follows an illustration of how one of these principles may be taught. In the same manner all of them should be treated. The method of proceeding is exceedingly simple, *viz:* Induce the child to write in pursuance of some other motive than that of merely making a letter or word, and while he writes, or before, lead him to observe how *you form the letters yourself.* He will *observe*, *compare*, and *assimilate* the rule you wish him to learn.

"Penholding," "position," and "movement," will teach themselves by unconscious comparisons if let alone.

I have seen a teacher break a class from using the finger movement, by the simple device of making them stand up while they write on slates: she gave no lecture to prove why the arm movement was better than the other, but merely put them in a position in which they would find it laborious to use the finger movement.

Much writing by tiring the muscles that hold the penholder firmly, is the best monitor possible to advise the proper holding of it.

To sit erect in writing becomes a habit, when the cramped positions which children assume at first, have had a chance to "hurt" them enough.

EXAMPLE I.

PROBLEM: *To teach how to begin and end words and properly space script writing.*

Let the teacher make a group of experiences as below, using sentences questioned out of the children:

1. *John went to his sister's wedding yesterday.*
2. *She was married in the church.*
3. *And drove away in a carriage.*
4. *She went to Chicago on a trip.*

Now it must be remembered that children are naturally conservatives and that what others whom they love do, is a law for them. Follow, therefore, this line of questioning directly to the principle you wish them to observe: Where did I (the teacher) commence the word "*went*?" Where did I end it? Where did I commence the word "*to*?" Where did I end it? etc., etc. Where did I commence *all* my words beginning with small letters? Where did I end the same words? What rule did I seem to follow? What rule ought *you* to follow?

If children are thus led to observe, compare and deduce from examples originated out of their experiences—not taken from a copy book or reader—they will undoubtedly retain the principle and apply it.

EXAMPLE II.

PROBLEM: *To teach the law of identity in language.*

If you should point to a horse and ask a child what it is, if he knows, he would tell you its name. Then, if you should ask him why he calls it *horse*, he would answer you in terms equivalent to saying, "because it is *like* other things that I have heard called *horse*."

In giving this answer the child demonstrates that the law of identity is a working principle with him. If you should talk to him about your horse that he has not seen, tell him that it had cast a shoe, that it is a trotting horse, or that it is blind in one eye, he has no difficulty in supplying *to his understanding* many things that you omit in telling, because he is automatically holding, as a guide to his thinking, the law: "Things identical as wholes, are identical in their parts."

By this law he sees one of *four feet* without a shoe, sees the movement *trotting*, as distinguished from other gaits, and sees one of *two eyes* blind. His imagination supplies a *road*, a *vehicle*, (perhaps *three shoes* nailed on, *ears*, *legs*, and many other things belonging to his concept *horse*.

Now the same law that assists

him in *understanding* you, also assists him in telling, but he does not know it, because he does not know that *sentences* are identical objects just as *horses* are, and that they have essential *parts*, *viz*: *subject*, *predicate*, *adjuncts*, *etc.*, performing functions similar to *legs*, *feet*, *ears*, *eyes*, etc., in a *horse*.

When his intellect assimilates this knowledge he applies it automatically in talking, and writing, that is, he *makes sentences* of what he *sees* or *remembers* or *perceives through intellectual action*, and utters them or writes them for another to *understand*.

A correct method in language teaching then, in my opinion, leads the child through observations, and comparisons that you cause him to make, to appropriation of the knowledge formulated above as a working principle.

The following directions modified to suit the degree of advancement of a class, supplemented by questions, will suffice I think to give the knowledge desired.

1. Give commands in writing, using words only that are in the vocabulary of the children. Have individuals obey the commands in silence, the others observing (be sure of the observing) that the action is in answer to the written command. Have the children copy the whole work on their slates.

(*a*) Bring me a drink of water, Mary.

(*b*) John, write your name for me.

(*c*) Come, Henry, and sit in this chair.

(*d*) Children, touch your desks with your pencils.

(*e*) Put coal in the stove, and lower one window sash about four inches.

(*f*) Write these words, "open sesame," on your slates.

2. Induce the children to write similar commands on the board, for you and others to obey by action. If the children called on can originate commands, and put commas, periods, capitals, etc., in the right places, then your work with direction 1, has caused them to perceive that (*a.*) (*b.*) (*c.*) (*d.*) etc., are identical objects, and that they have essential parts. If they do not do this, correct their work by erasing and supplying until they do copy after the models. It is necessary in most cases to oblige comparison by direct questioning in order to reach all children in the class.

3. Question out statements based on the actions they have observed in directions (1) and (2), thus: What did Mary do? How did John obey my *command*? etc., etc. As satisfactory oral answers are given, write the statements on the board, and have them copied on slates or pads:

(*a*) Mary brought the teacher a drink.

(*b*) John wrote his name on the board.

(*c*) Henry went and sat on the chair.

(*d*) We touched our desks with our pencils.

(*e*) Ernest put some coal in the stove, and lowered the sash of the north window about six inches, that was more than the teacher told him.

(*f*) We wrote, "open sesame," on our slates.

4. Induce children to make statements about actions that are going on around them, and within view on the outside, Do this by questions, thus: What is this fly doing? Which way is the wind blowing? etc., etc. Write results

on board and slates, thus:

(*a*) The fly is sitting on the teacher's hand.

(*b*) The wind is coming in at the west window.

(*c*) The leaves are falling very fast.

(*d*) John is saying, "Henry took my slate."

(*e*) The fire is dying out.

5. Ask individuals to reproduce what you said before (*a*,) (*b*,) (*c*,) etc., in (3) and (4) were written. As the questions are reproduced orally, write them on the board and have them copied on pads or slates:

(*a*) What is the fly doing?

(*b*) From which way is the wind blowing?

(*c*) What can you say about the leaves?

(*d*) What is John saying to Henry?

(*e*) How is the fire getting along?

6. Write a group of questions and have the children write appropriate answers. If they do this readily, copying the models you have given in form, they have observed properly. If they fail, correct their work, *without telling why*, until they begin to observe for themselves. It will hardly be possible however to get *all* in a class to form rules for writing sentences without spurring their intellects to action by questions. The method of doing this is illustrated in the next example (3).

7. Write a series of statements, and require the children to frame questions that "would make anybody say" them in answer, thus:

"A tall tree stands near the school-gate." The question that "would make anybody say this" is: "What kind of a tree stands near the school-gate?"

The object of this direction is to get children to observe the identity of question and answer. If some one is sent for to answer the question, it will appear that he can give the answer in full except the word "tall." Now he can only get this by looking at the tree *as you look at it*, that is, with your motive.

8. Continue till the opportunity is given to every child to notice the identity between question and answer. Follow the same directions in getting the children to adopt proper forms, as have been heretofore given under (2) and (6).

As the work proceeds the teacher will perceive that the children are beginning to realize that sentences are real objects, he will perceive also that they distinguish between the functions of the several types. At this stage their minds have begun to classify and names are needed. Adopt any classification you prefer. With a class I use the terms, *question*, *command*, and *answer* or *statement* to name the types developed. I use the term *sentence* for the generic idea.

So far I have outlined the work of teaching this principle as it may be made available for primary classes. Following these directions one can cause the children to analize the sentence and perceive its parts only imperfectly. But they do lead to a concept of it as a whole and of its three general functions. They also learn to recognize its written form, and its corresponding spoken form.

The "identity of sentences in all their parts," will not be fully realized till children have been in school three or four years, and the attempt should not be made to force the knowledge upon them by requiring them to repeat definitions and point out parts of speech, etc.

I would suggest the following plan for securing the complete assimilation.

9. Induce every child to think of some object that can "stand." Caution each one to select some real object *now* standing somewhere that we might go and look at. Write the word "stands" on the

board, and have each to write it on his slate or pad. Next make a dash before the word, thus:

(*a*) $\frac{1}{_}$stands.

Require each pupil in copying to write the name of his object where you have placed the dash. Number your line (*a*) and ask each to number his the same way. Add another dash producing:

(*b*) $\frac{2}{_}\ \frac{1}{_}$stands.

Require each pupil to write an additional word telling "what kind of" for the dash. In like manner expand by requiring additions, as follows:

(*c*) $\frac{3}{_}\ \frac{2}{_}\ \frac{1}{_}$stands, (Word telling "which."

(*d*) $\frac{3}{_}\ \frac{2}{_}\ \frac{1}{_}$stands, $\frac{4}{_}$ (Word or more than one telling "how it stands."

(*e*) $\frac{3}{_}\ \frac{2}{_}\ \frac{1}{_}$stands $\frac{4}{_}\ \frac{5}{_}$ (Word or words telling "where."

The children will have on their slates such identical expressions, as:

(*c'*) An old man stands quietly on the opposite corner.

(*e''*) A large tree stands in full leaf on the common.

(*e'''*) etc., etc., etc., etc., etc., etc.

10. Call on the children now to discover, *without looking at each others slates*, and to name the points of resemblance among their sentences.

It will be possible to get them to name all the points covered by your directions in preparing them, such as:

1. Each tells of something that stands,
2. Each describes (tells what kind of) an object it is.
3. Each tells "which" object of its kind is meant.
4. Each tells "how" it stands.
5. Each tells "where" it stands.

11. After they succeed in discovering these resemblances, require them to write a sentence that will include in its meaning every sentence on the slates. By calling attention to your skeleton sentence on the board, they can succeed, thus:

(*e*) $\frac{3}{(3)}\ \frac{2}{(2)}\ \frac{1}{(1)}$stands $\frac{4}{(4)}\ \frac{5}{(5)}$

(*e'*) *A certain described something stands somehow somewhere.*

12. The function of modifiers can be shown by (*a*), (*b*), (*c*), (*d*) and (*e*) to be determining the extent of meaning in each group. It can thus be made plain that "stands" in taking tense form is in fact, like *amat* in Latin, a complete expression having all essential modifiers in generic signification. It means in full:

(*a*) *Something somewhere somehow stands.*

This comparison makes clear that (*b*), (*c*), (*d*) and (*e*) respectively each represents an idea less comprehensive than the preceding, thus showing that the function of modifiers is to restrict (make specific) the signification of the germ word.

13. Repetitions of this work with other generic sentences, and modifiers is necessary to make children thoroughly understand that their sentences are but objects, and that they have esssential parts with definite functions.

If the work is done well it will constitute a thorough preparation for the study of grammar.

Example III.

Problem: *To teach a pupil the principle of writing plain, declarative sentences.*

To do this intelligently, that is, after a principle, the pupil must be able to decide instantly as to what writings come under his principle.

The teacher must therefore give him the personal experience that will enable him to make his decision promptly. A number of plain examples should be brought out by questions to the class as follows: What is lying on the desk? Where do you live? Where did you go yesterday? Whose book do I hold? etc., etc., and be plainly written by the teacher on the board, and copied by the children on their pads or slates, thus:

1. *A slate is lying on the desk.*
2. *John lives on Walnut Street.*
3. *Henry went to New Albany yesterday.*
4. *The teacher has Mary's book.*

These constitute the experiences for the pupils from which the teacher may cause them to assimilate the principle by leading them to make the proper observations, comparisons, and generalizations. Question first as to points of resemblance and identity, thus: How did I begin No. 1, No. 2, No. 3, etc.? What mark did I place at the end of each sentence? How came the first sentence to be written? the second? the third? etc.

At this point it would be well to appeal to some other motive in the children and get other dissimilar sentences, adding them to the group, thus:

5. Bring me a drink of water.
6. Where did you get that hat?
7. Shut the door.
8. How old are you?

By comparing these with 1, 2, 3, 4, and 5, and with each other, the various motives that originated them can be brought to the perception of the children. A few questions upon the original group designed to call attention to the resemblance, "written or spoken to answer a question," will cause the principle to take form in their minds as follows: "When I write anything which is in answer to a question, I must begin it with a capital and end it with a period."

Bear in mind that a single group of sentences will not assure the fixing of this principle with every member of a class. Frequent repetitions with other groups will be necessary in every case to reach all. There is great value in teaching the details of punctuation in just the way I have attempted to outline, inasmuch as it exercises all the thinking powers of the mind. In no other way can results be achieved that will compare satisfactorily with this, in time used, in confidence imparted, and in attention and eagerness on the part of the children.

It is not thought necessary to illustrate further, how to secure automatic use of punctuation marks. If you try this for a week or two, and find that it does succeed in making the use of the period automatic, you can then easily construct groups through which to teach the various uses of the comma, and other marks.

EXAMPLE IV.

PROBLEM: *To teach the principle of writing a story from a picture.*

1. Select a picture and spend a few minutes in getting the class to examine it. If they are backward in seeing all that is of interest in the picture, lead them to discover *what you see* by appropriate questions. It is supposed in this direction that the teacher is a person of taste and judgment, and imagination enough to construct a readable story. It is the teacher's story that is to be written. Considerable tact is necessary to avoid using your own language. At first most teachers find it necessary to help with a sentence now and then.

2. After the preparatory talk agree upon *names* for the persons, animals, etc., in the picture. Fix upon the *time* and *place* and *motives* of the actors (if these are apparent in the picture). Make these selections by a majority vote after hearing arguments pro and con.

3. Proceed to question out of the children the story you have in mind. As the sentences are evolved, write them upon the board and have them copied by the children on slates or pads.

4. Last of all select an appropriate title. After the children learn the principle and can work independently, this may be done before the story is written, but it is better while the principle is being developed with them to originate it after, as it gives freer range to the imagination.

5. Follow this plan day after day, and with small children week after week, and it will without fail result in giving them the power of writing a creditable story. They will spell their words and punctuate their sentences as well as their teacher can, no worse, no better.

I intend in a subsequent chapter to trace the effects upon intellect of this method of dealing with children learning a principle, but can not refrain from a brief reference to it here as this exercise illustrates so clearly the process of providing an experience through which only a principle can be learned.

The first and all subsequent stories upon the pictures used in the training process, it will be noticed exist in inchoate form in the teacher's mind before they are evolved. If the teacher uses tact, each story produced becomes an original experience to each pupil—his taste, and judgment, and imagination have been exercised and become in part the property of the child. Repetitions (other stories produced) while further exercising his pupils' perceptive powers, also bring into use their comparing powers. Day by day the pupil sees the teacher use punctuation marks and capital letters in certain cases. Week after week he witnesses changes made in the langauge offered by his comrades and himself. Almost every day he sees the teacher write some word different from the way he would have done if he had been the teacher. Unconsciously at first but consciously after awhile he notices the *resemblances* of the cases where commas and capitals, etc., are used. He observes the uniformity of the cases in which the language is corrected by the teacher. He finds after awhile that he can copy the stories without looking at them. He has *assimilated* a complete working principle for the work. He would blunder sadly if required to tell the rules for commas, tenses, capitals, etc., that he applies but he does apply them all the same.

EXAMPLE V.

PROBLEM: *To teach the principle for describing an object.*

I put this principle into language as I think it will enable my readers better to comprehend the illustration. It is as follows: *A perfect description distinguishes the object described and each of its classes from all others.*

Following is printed a description drawn out from a class of children ten years old. I shall illustrate the method by telling first how this was produced, and further how the class has been conducted through several months of similar work.

DESCRIPTION OF A HAT.

The hat is made of straw. It is black and has a high crown. The crown is flat on top. The hat has black lining. It is trimmed in brown ribbon, and it has a large round brim. The brim is pinched out in some places. The lining is torn. The hat is made of two kinds of straw, fine and coarse. It has a velvet fold on the edge. It has two hat pins, a long and a short one. The ribbon is around the crown. It has no rubber.

The sentences of this description were suggested by individuals in the class. When two or more were offered, a selection was made by the teacher generally, but sometimes by a majority vote when the offers afforded a chance for discussion.

The hats belonging to all the children were brought in and placed before the class. They were then divided into the classes *straw* and *not straw* by the teacher, the children observing what she was doing. The teacher then selected one from the class *straw hats*, and held it up, asking, "What kind of a hat is this?" The first descriptive sentence: *The hat is made of straw*, was selected from a number of answers offered, and written by all.

The teacher then put aside the hats, *not straw*, and placed with the one selected all the straw hats that resembled it in many particulars. Those that were strikingly different were put in other classes according to their resemblances. This was done in silence, the children observing closely the actions of the teacher. When the classification was finished, the teacher held up the same hat as before and asked, "What kind of a hat is it now?" The descriptive words "high-crowned" and "black" were both inserted in the sentence as an after-suggestion of some one. The teacher had selected *black* to classify by, but it so happened that *high-crowned* was also a common attribute to the class and served likewise to separate it from the other classes. After this sentence was written a new arrangement was made and the same question asked for the next sentence. So the exercise proceeded to the end. When the last sentence, *It has no rubber*, was reached, there were yet four or five hats left.

There were many offers made of sentences, but all of them were faulty except the one selected inasmuch as they contained terms that might apply to others in the group. This exercise has been practiced weekly by the class. Spools, slates, books, lunch-bags, pieces of paper, marbles, etc., etc., have been used from time to time in class. After each description was written, another teacher or the principal, or a committee from another room was sent for to read the description and identify the object. If every sentence had to be read and every object handled before this identification was made, it was counted extra meritorious. At intervals the children were tested by independent exercises in describing: A friend, a schoolmate, a house, a man, a woman, a boy, an animal, etc., etc., with the condition that the examiner should also be acquainted with the object or person described.

Many repetitions are necessary to enable the children to "catch on" to this principle, but the results will reward any teacher who undertakes it.

ADDITIONAL SUGGESTIONS.

The outline given above is based

on a study of objects. It is the beginning point of description, but this art extends much farther. A scene in nature, a process in manufacture, an account of a fire or of a battle, and compositions of like character belong to description. Gen. Wallace's "Chariot Race," and Rider Haggard's battle scenes are modern examples of descriptive writing well worthy of study by a teacher who wishes to outline a course of training, that will educate a class in the art of word painting. Below is given an outline of how I think the work ought to be commenced.

(*A.*) Decide upon a series of actions to be performed, which are to be described by the class. The test of accuracy should be for some one not present at the time to perform the actions after reading the description.

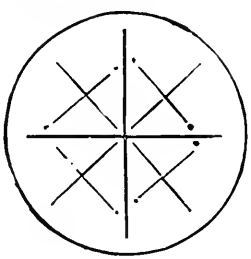
[A case is taken from practice for illustration.]

1. The teacher performed the action described, and secured from the children the following:

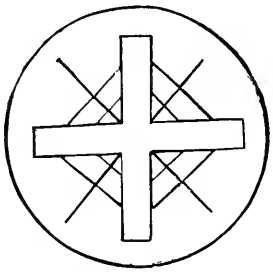
(*a*) "The teacher drew a circle on the board."

2. Continuing with the actions agreed upon, the teacher recorded the sentences as they were evolved.

(*b*) "She then drew a cross within the circle. (*c*) Next she drew short lines within the angles of the cross. (*d*) Lastly she bisected the lines last drawn, and placed dots at the ends of the short bisecting lines." The figure they had drawn was this:



3. The drawing was erased from one slate, and the owner was sent with the description to another room. He was charged to request the other teacher to produce the drawing from the description. After a short interval he returned with the following design:



4. This was placed on the board near the other, and a comparison was made of the two. All agreed after a short discussion, that the other teacher had not violated instructions.

5. Correcting the description then began, and ended with the following amended description.

(*a*) "The teacher drew a circle on the board, which was six inches in diameter. She then drew one horizontal and one vertical line, each passing through the center, and terminating near the circumference. Next she drew a single line bisecting each angle of the cross, but not reaching to the center or circumference. Lastly she bisected these lines, and placed dots at the ends of the short bisecting line."

6. This description was then sent to the other teacher. The figure she returned was so near like the original one that no further amendments were necessary.

(*B*) These directions embrace a single lesson in description. Many repetitions are necessary before the pupils will be able to do creditable

work. No lesson ought to be repeated, but a new process or narrative must be used at each succeeding lesson.

(*C*) Alternating with the lessons advised under (*A*) and (*B*) above, selections of good descriptions ought to be read by the class, and examined critically by them under the guidance of the teacher. Longfellow's "Village Blacksmith," has no superfluous words in it. Every stanza almost is a lively picture.

Our school readers have many fine examples of description. Any one who tries it will be pleased to find that he can easily get children to appreciate these extracts.

The following poem by Bret Harte, is a fine specimen of the kind of extract suitable for this work:

1. Above the pines the moon was slowly drifting,
The river sang below;
The dim Sierras, far beyond, uplifting
Their minarets of snow.

2. The waving camp-fire, with rude humor, painted
The ruddy tints of health
On haggard face and form that dropped and fainted
In the fierce race for wealth;

3. Till one arose and from his pack's scant treasure
A hoarded volume drew,
And cards were dropped from hands of listless leisure
To hear the tale anew.

4. And then, while round them shadows gathered faster,
And as the fire-light fell,
He read aloud the book wherein the Master
Had writ of "Little Nell."

5. Perhaps 't was boyish fancy—for the reader
Was youngest of them all—
But as he read from clustering pine and cedar
A silence seemed to fall.

6. The fir-trees, gathering closer in the shadows,
Listened in every spray,
While the whole camp with Nell on English meadows
Wandered and lost their way.

7. And so in mountain solitudes—o'ertaken
As by some spell divine—
Their cares dropped from them like the needles shaken
From out the gusty pine.

8. Lost is that camp, and wasted all its fire;
And he who wrought that spell?
Ah! towering pine and stately Kentish spire,
Ye have one tale to tell!

9. Lost is that camp! but let its fragrant story
Blend with the breath that thrills
With hop-vines' incense all the pensive glory
That fills the Kentish hills.

10. And on that grave where English oak and holly
And laurel wreaths entwine,
Deem it not all a too presumptuous folly,
This spray of western pine! BRET HARTE.

Example VI.

Problem: *To teach the principle of making an abstract or synopsis of a story.*

1. Read the story to the class.
2. After the reading call for the names of the characters (actors) in the story.
3. Make a list of these as they are given by individuals.
4. Make a list also of the acts performed by each of the characters.
5. And a list of the times mentioned in the story.
6. Also make a list of the places mentioned.
7. As these items of actions, times, places, etc., etc., are given pause to ask "*why*" each is suggested.
8. Compare the actions to determine the order, the place, and the time of each. The children are now ready to write the story.

If the story selected is wanting in any of the details noted above, supply them by assuming reasonable *times, places*, etc., for the happenings. These assumptions must be drawn out from the children not dictated by the teacher. As a rule, I think such selections, as leave many of the essentials to be supplied by the imagination of the learner, will be found to be most improving.

Below is a lesson taken from McGuffey's Alternate Third Reader, which is especially fine for this series of lessons. It will be noticed that the characters are not named specifically, or described particularly. The time is left out, and the place barely suggested.

THE BEAUTIFUL HAND.

There was a dispute among three ladies as to which had the most beautiful hands.

One of them sat by a stream and washed her hands in the water; another picked strawberries until the ends of her fingers were of a pink color; and another gathered violets until her hands were fragrant with their perfume.

An old woman passing by asked, "Who will give me a gift?" All three shook their heads; but another who sat near, unwashed by the stream, unstained by fruit, unadorned with flowers, gave her a gift.

The poor woman then asked them what they were disputing about. They told her, and held up their hands.

"Beautiful indeed," said she, when she saw them; "but the hand that gives to the poor is more beautiful than one that is washed in the clear stream, stained by fruit, or garlanded with fragrant flowers."

9. Let each child select a character and tell the story as if it were written by the personage he selects. Thus, in the lesson above one might tell it giving the impressions of the beggar woman, another giving the probable version of the woman who gave the gift, while others might record the story as told by one or another of the ladies who were disputing.

10. Repeat the exercise using a different selection each time, until the children can write a consistent account *in their own language* of anything they read. Poems of a certain character afford good material for lessons. The following taken from Butler's Fifth Reader is particularly fine for the purpose.

1. On the road, the lonely road,
   Under the cold, white moon;
   Under the rugged trees he strode,
   Whistled and shifted his heavy load—
   Whistled a foolish tune.

2. There was a step timed with his own,
A figure that stooped and bowed;
A cold white blade that flashed and shone,
Like a splinter of daylight downward thrown—
And the moon went behind a cloud.

3. But the moon came out so broad and good
The barn-fowl woke and crowed,
Then roughed his feathers in drowsy mood;
And the brown owl called to his mate in the wood
That a man lay dead in the road.

W. W. HARNEY.

EXAMPLE VII.

PROBLEM: *To teach the principle of written composition.* [Rules for facility in expressson.]

Two things are necessary to make a ready writer. First, he must have something to say; second, he must be able to say it. Composition writing to children is often an irksome task. Those of us who "had our turn" a generation ago, can remember with what dread we heard the announcement, "Bring compositions to-morrow."

But methods have changed; now in many schools to write a composition is one of the agreeable tasks. And there is no reason why it should not be in all schools.

Children, like their elders love to talk, and when left free to entertain each other, will prattle hour after hour.

The series of lessons outlined below are based on the theory, that anyone having the power to think—and that includes every sane human being—can be taught to put in writing whatever desires, opinions, requests, etc., he may be called on to put into spoken words. The circumstances of every one's life compel him to talk a great deal. Composition writing if it embraces those topics on which the pupil is obliged to talk is the most effective means of educating him to use conventional forms of speech.

1. Select one pupil, and while the others give attention, conduct a conversation with him in writing on the board. The class must copy the whole work on their slates or writing pads. A probable conversation is appended below.

"Well Mary, that is a pretty dress you have; who selected it?"

"I told mamma what kind of a dress I wanted, and she bought it."

"Did she buy it ready made; or did she get the material and have it made by a dressmaker?

"Neither; she bought the material, and we made it at home."

"Who are *we*? Do you mean to say that *you* had anything to do with making that dress?"

"Certainly I did. I sewed on the buttons, hemmed the skirt, and ran some of the seams. Mamma and sister did the rest. Sister cut it out and fitted it."

In conducting this conversation when your pupil misspells a word or fails to punctuate, correct the mistake before the class is allowed to copy it.

2. Reverse the process if possible, at the next lesson. Induce some one to take the lead in the conversation. It will give you an opportunity by making full answers, to introduce new idioms, and to illustrate new uses of the punctuation marks.

3. After some days of this practice, when the children have observed and compared the work of

the several lessons, so as to have formed some rules for punctuation, divide them into pairs, and let each pair write a slate full upon any topic they may wish to converse.

One can readily tell when to venture upon "pairing off" by noticing the progress of the children you have called to the board from time to time. If these show by their work that they have assimilated rules for punctuation, it may be safely assumed that all have.

4. As soon as one pair is ready, examine their joint work, point out errors, and have them corrected. Examine other slates in turn as they are finished—as many as your time will allow. It is not at all necessary that every slate should be examined every day.

Have a number of the dialogues read aloud for the edification of the class. Encourage the children to ask how to spell words they are uncertain about before writing them, and to inquire about where marks should be placed. When called on to decide as to a comma or other mark, show them a *similar* passage in their reader and let *it* decide the point. Thus you incidentally teach them how to find out for themselves.

5. Continue the "pairing process," putting the ready learners with the slow, utilizing their knowledge to help those who need help, until your examination of their work shows that they have adopted comprehensive idioms, and are punctuating automatically. Then ask each one to conduct both sides of the conversation, that is, let him write both questions and answers. At first many will fail to do this, but when they hear read the productions of their comrades, who are blessed with lively imaginations, they will understand how it is done.

6. The next step is to have the conversations upon some set topic, as the geography lesson for the day, upon Europe, upon Washington, or upon a visit somewhere.

7. Surprise the children some day by erasing the questions, from the conversations you select to have read aloud. It will be a genuine pleasure to them to discover how nicely the answers fit together. At the next lesson (each for himself,) let them prepare their slates with the end in view of erasing the questions. This will oblige them to answer in complete sentences, and to question in logical order.

When your children can make a success following this direction, they are ready to drop the questions entirely; they are ready for composition, they have assimilated this rule: *To be able to write a composition, one must be able to ask himself questions, and write the answers.*

BUILDING A VOCABULARY.

In practice with classes following the method just outlined, I have noticed the curious fact that children who were reading in the fifth reader understandingly, and who were working out intelligently a knowledge of geography from reading the text, failed to use to any extent many words, with the meaning of which they were perfectly familiar.

Their compositions were admirable, both in idiom and punctuation, but their words were not "book words."

It has been a serious problem with me how to oblige children to use in language new words learned at school. I have not yet mastered the art, but I know that I am hav-

ing better success than I once had. The word lessons outlined in Chapter IV, assist in reaching the end desired. In addition to these I have used with great advantage certain lessons suggested in Stickney's Language Lessons, No. 4, varying them to suit the particular purpose for which I use them.

(*A*) PROBLEM: *To increase the child's adjective vocabulary.*

1. Select a number of common objects, as *tree*, *house*, *man*, *field*, *road*, *pond*, etc., making a group comprehensive enough to exhaust the resources of the language in describing them.

2. Draw out by questions, as many adjectives as you can, descriptive of particular objects under each class in all possible positions and other relations. This can be done after the children cease to suggest, by picturing for them the "kind of" by a question, thus: "What kind of a pond is it that a boy can wade? What kind of a road is it that stretches over ten miles in going six? If a field yields 40 bu. of wheat, and another only 10 bu. to the acre, what kind of a field is each?"

It will be found that children five or six years in school, can supply these words as readily as grown people. They have learned the meanings from their reading lessons. The object of this drill is to cause them to adopt them for use.

3. Search the text books your class use for other adjectives. Get the children to describe the particular relations of the case in hand that suggest the adjective under discussion. For instance, some one has called attention to *whirling* and *dashing* in the lines.

"Soon whirling, dashing snowflakes
Will beat the window pane."

Inquire why *whirling* is used instead of *turning* or *tumbling*? Why *dashing* instead of *driving* or *falling*, or some other, kindred in meaning? Illustrate by action all meanings brought into comparison.

4. Bring out uses of these words by inducing the children to make sentences including them. Suppose the word "sedate" for instance, has been added to the list. Now let childen name particular individuals of their acquaintance coming under the term *sedate*, as follows:

"Mr. Williams is a *sedate* man." "Why do you think so?" Because he is never in a hurry, because he thinks before he acts, because he is not passionate, because he is in earnest always, etc., etc."

5. After two or three hundred new adjectives are collected in this way, select from the list words in no way synonymous, and have the children write under them others from the list kindred in meaning. This insures an exhaustive comparison of the whole material. After this a child is very apt to have a word in memory for any quality he may wish to picture.

Below is illustrated how the work of this direction will appear on the board.

(1)	(2)	(3)	(4)
good,	round,	for,	etc.
elegant,	circular,	distant,	etc.
likely,	curved,	remote,	etc.
tolerable,	oval,	ancient,	etc.
fair,	spherical,	eternal,	etc.
etc.,	etc.,	etc.,	etc.

(*B*) PROBLEM: *To increase the child's vocabulary of abstract terms.*

1. Hold before the class a ruler and a cane. Ask them to discover all the respects in which they are alike. Bring other objects as a poker, a penholder, a pencil, etc., into the group under comparison till you get the word *length* sug-

gested as the name of the common attribute, or until you have answers showing that children have the idea *length*. In the latter case you must give the term to name the resemblance they observe.

2. So continue with *direction*, *space*, *time*, *color*, *redness*, *quantity*, and others that you may wish to bring into their vocabulary.

(*C*) PROBLEM: *To increase the verb vocabulary.*

1. Proceed as with adjectives varying the questions to suit the purpose in hand.

(*D*) PROBLEM: *To increase the adverb vocabulary.*

1. Make lists of words and adjuncts using the questions how? when? where? why? in the same general manner prescribed under the study of adjectives, for "what kind of?"

2. Add to the lists other expressions found in text books, which seem to perform the functions *how*, *when*, etc. When the meaning is not clear from the context, illustrate the material before placing it in the lists.

3. Classify the material gathered under the heads above noted, thus:

How?	When?	Where?	Why?
slowly,	last week,	at home,	for this reason,
in a hurry,	now,	here,	because he went,
awkwardly,	never,	underneath the stone,	to get rich,
etc.,	etc.,	etc.,	etc.

CHAPTER VII.

ILLUSTRATIVE LESSONS. GRAMMAR.

THE observant reader will have noticed that much of the work outlined in previous chapters is an essential part of grammatical instruction. The whole range of grammar includes orthography, orthœpy, etymology and syntax.

I have given outlines to show how the pupil may be taught to spell, and I have given under Language Work certain principles in the acquiring of which the pupil has been caused to analyze the sentence, and to learn but not name its essential parts.

The purpose in mind of the teacher in that work should be to equip a pupil for expressing himself intelligently in writing. If used for this purpose, the power sought to be imparted will come, and along with it will have come the power of understanding descriptions, both of objects and scenes, or events written by others. The pupil thoroughly equipped with the working principles outlined, in Chapters IV, V, VI, can read History and tales of adventure with profit; he can enjoy novels of the better class. But he cannot read that class of works in which great thinkers have recorded their conclusions; he cannot read (except with the assistance of a teacher,) works in science.

A course in grammar is the most expeditious means of equipping a pupil with the power of "inheriting the stored wisdom of the centuries."

It is a mistake to use the facts formulated in a text book on grammar, for the purpose of "teaching the pupil to speak and write cor-

rectly," for he must learn that art through such lessons as have been outlined heretofore. He must be taught grammar in order to be able to master in reading such passages as these:

"The character of all military operations, whether those of strategy or tactics, is mainly determined by the nature of the armies engaged in then." [*Encyclopedia Brittanica.*]

"Beeswax is possessed of properties which render it a most convenient medium for preparing figures and models, either by modelling or by casting in moulds," [*Ibid.*]

"To secure the highest attainable degree of maturity in the grapes, the vintage is postponed until the grapes almost begin to wither, and the white grapes on the sunny side of the bunches exhibit a yellowish brown colour, and show signs of flaccidity." [*Ibid.*]

Read these extracts as an experiment: ponder them until you get a clear idea of what each tells, then observe to what extent and how your knowledge of "grammatical laws and syntax" has assisted you.

Do this and you will understand better than I could otherwise tell you the true function of grammar as a school study. You will then go more intelligently about your task, for you will have in mind a definite purpose in giving the lessons.

The place of grammar in school is a debated one. If writers and speakers were all agreed upon the meaning of the term, I have the idea that bickering would cease.

I have tried to indicate in this introduction what I believe to be the purpose of Grammar; its place as determined by that purpose would be to "go up higher."

Below are presented several examples of what I conceive to be the proper method of inducting a pupil into the knowledge embraced by the definitions, by analysis, and by parsing.

EXAMPLE I.

PROBLEM: *To teach the working principles that determine the essential parts of a sentence.* [How to analyze.]

1. Perform some action in presence of the class. Have some individual describe what happened. Write the result on the board, and require the children to copy on their slates or pads, thus:

(*a*) The teacher struck the desk with a ruler.

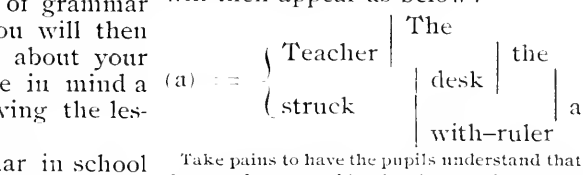
2. Ask questions as follows:

Who struck the desk?
What did the teacher do?
What did he strike?
How did he strike?
With which ruler?
Which teacher? Which desk?

And as the answers are given by the pupils, arrange them according to whatever graphical form you may prefer.

[I use Butler's diagraming because it is familiar to me.]

Your work with the sentence will then appear as below:



Take pains to have the pupils understand that the two forms are identical in meaning. This can be done by the use of the sign = between them, and by having sentences read from the diagram occasionally.

3. Continue by performing other actions, such as would be described by the sentences below, varying the idiom little by little until you have practiced your class in simple complex, and compound sentences

made *in their own language, out of their own experiences.* Diagram these and have them copied day by day. Three or four weeks of this work will be well utilized if supplemented by other work according to the next direction.

(*b*) The ball rolled from the table to the floor.

(*c*) The teacher's hat hangs on the peg nearest the door.

(*d*) The chair with a torn seat was taken out of the room.

(*e*) The old lady who lives next door, came to inquire about her grandson, George Sanders.

(*f*) The teacher gave her a good account of George.

(*g*) Henry took a hat and a cap off their hooks; he brought them to the teacher, who asked us to tell how they were alike.

4. When a number of sentences have been diagrammed in the way indicated, the pupils will have noticed that certain parts of the diagram (functions) are recorded in answer to certain questions. If any have not observed this without prompting, they can be led to do so by alternating your duties in the matter with theirs. It adds interest to the work to let some pupil act as teacher, and causes every one to notice more closely the *whats* of the work. Having secured observation to the work, without telling what you are intending to do, require them to classify the parts of their sentences by their resemblances to certain parts that you select.

Some of the work as it would appear on their tablets for the sentences above would be as follows, the words at the head of each column being the type words you gave them:

A.	B.	C.	D.
Henry,	*struck,*	*desk,*	*nearest the door.*
teacher,	rolled,	account,	with a torn seat,
lady,	was taken,	hat and cap,	who lives next door,
chair,	lines,	them,	the,
ball,	came,	how they were alike,	a,
he,	gave,	etc.,	next,
who,	took,	etc.,	of George,
etc.,	etc.		

This work of comparing the parts of the sentences used each day, ought to be continued till all the class can fill out the columns with readiness. Being able to make the column, (*A*) assures the teacher that the pupils have the experience necessary to understand what the *subject* is. Have them tell what they think, and alter the language they give to the definition you want. So proceed with (*B*) for *predicate*, with (*C*) for *object*, with (*D*) for *adjective modifier*, and with other groups formed by the children comparing with types you have selected from their sentences thus:

[*For adverbial modifier.*]		[*For possessive.*]
on the peg	(how)	*teacher's*
to the floor	(where)	his
to inquire	(why)	their
then	(when)	her
etc.		etc.

5. Continue with sentences selected from some easy text, the same kind of lessons. It will be found usually that the sentences in a third reader are difficult enough at first. When they can diagram readily, gradually drop that work, and have them tell the analysis; in writing, at first, to secure correct forms of expression and consecutive habits of observing, and, afterwards, orally.

A specimen of written analysis is given below.

"*Chair* is the subject, it is modified by *the*, a first class adjective modifier, and by *with a torn seat*, an adjective modifier of the second class. The noun *seat* is modified by *a* and *torn*, modifiers of the first class. *Was taken* is the predicate; it is modified by *out of the room*, an adverbial modifier of the second class. The noun *room* is modified by *the*."

6. Continue analysis (oral,) gradually changing the nature of the sentences, until the class can readily analyze stanzas from poetry, and such extracts as were quoted on page 43.

1 have given under the directions all of the work that belongs to the process of learning analysis. But it is not intended that the pupil shall do this before anything else is learned. I had to put it all together, in order to show the relations of one part to the others.

There is a necessity for technical names, which are used for brevity in the oral analysis. And that the judgment of the pupil may act unerringly a formal study of definitions, a development of them is also necessary. These studies and in fact the whole work would be better done in alternation with the other examples of principle development illustrated below.

Example II.

Problem: *To teach the principles that determine classification.* (How to define and use definitions of parts of speech.)

1. Develop a series of sentences *from the pupils' experiences*, after the manner indicated in the last example, in which several words belonging to the class you have in mind to teach are used. Question upon the office of each word in turn, till each has been perceived. Write out the statements describing each, and by comparison of these statements, noting their resemblances get a general statement which includes the several specific statements. This statement constitutes the law for the definition. For instance:

(*a*) An *old* man needs a *stout* cane.

(*b*) That *tall* chimney overlooks a *wide* space.

(*c*) *Green* apples are not usually *sweet*.

etc., etc., etc., etc.

Specific Statements	*Old* describes a man. *Stout* describes a cane. *Tall* describes a chimney. *Wide* describes a space. *Green* describes certain apples. *Sweet* describes other apples.

General: *Many words describe objects.*

These words are now perceived by the pupils to belong to a class, i. e., a resemblance is discovered in them; the demand for a name for the class is born. When the teacher gives the name, *Descriptive Adjective*, they are ready to define it by the general law they have discovered. Another group may be developed to include uses of several definitive adjectives. From this series specific statements can be questioned out, which will combine into the general law: Many

words are used to point out which object or objects are meant. Using this law to guide them, the pupils will be able to define, *Definitive Adjective.*

When both classes of adjectives are clearly established in mind, the pupils can be led to discover the resemblance between them, as follows:

Develop sentences containing such expressions as

(*a*) rich man,
(*b*) that man,
(*c*) lame horse,
(*d*) this house,
(*e*) six men,
(*f*) open windows.

Set up a comparison as to the extent of meaning of the whole sentence, when *man, horse, house,* etc., stand alone, and when they are modified by *rich, that, lame, etc.* Thus it is apparent that, *Six men entered the house,* cannot be thought to include as many as, *Men entered the house.* So for the other.

When the comparison has been made in all the examples, separate statements of the facts perceived, can be questioned out from which the general law. *Many words are used to restrict the meaning of others,* can be derived.

2. In teaching the definition for *adverb,* pursue the same general plan as has been outlined for adjectives. Sentences *made by the pupils descriptive of their experiences,* must be improvised. In answer to, "*What* is this or that used for?" Statements as follows, can be obtained.

(*a*) *Boldly* is used to tell *how* the boy *advanced.*

(*b*) *Slowly* tells *how* the teacher walked.

(*c*) *Very* describes *how sweet* the apple is.

(*d*) *Soon* tells *when* Jane *is going* to the country.

(*e*) *Quite* tells *how sick* the baby was.

(*f*) *Lately* tells *when* the fever *prevailed.*

(*g*) *Yonder* tells where John *lives.*

etc., etc,, etc., etc., etc.

By comparing the words italicised, as was illustrated under adjectives, two general laws may be discovered, viz.

(*A*) Some words are used to describe *actions.*

(*B*) Some words are used to describe *qualities.*

As in the other case the resemblance between the words under each law, can be shown, that is, that they all come under the law: "*Many words are used to restrict the meaning of others.*

The difference between *adjectives* and the *new class* can be easily shown by a group containing both kinds. One restricts the meaning of *names of objects* the other restricts the meaning of *names of actions, qualities, etc.*

A new species has been discovered, a new name is wanted. *Adverb* is given, and the pupils can define it.

3. In teaching *noun, verb, preposition, pronoun* and *conjunction,* the same manner of leading up to the definition should be used, viz: Make a group of sentences, describing selected experiences of the pupils. From these have the pupils make specific statement of scriptive, of the use of individual words of the class you are intending them to discover. And from these species by comparison lead to the discovery of a general law. In obedience to that law have the pupils write a definition.

4. After the parts of speech are learned, give many lessons in classifying words occurring in sen-

tences. Suppose the following sentences have been developed, for the analysis lesson or for any other purpose.

(*a*) A heavy cart rattles loudly on a granite pavement.

(*b*) The wind blows from the south-west to-day.

(*c*) Yesterday it blew from the north-east.

(*d*) It blew almost a gale yesterday, but to-day it is mild and balmy.

etc., etc,, etc., etc., etc.

Let the pupils arrange them in columns under the various definitions they are supposed to have learned, thus:

NOUNS;	ADJECTIVES;	VERBS;	PREPOSITION;	ADVERBS;	PRONOUNS.
wind,	balmy,	blew,	from,	almost,	it,
south-east,	mild,	is,	on,	to-day,	it,
gale,	the,	blows,	CONJUNCTIONS,	yesterday,	etc.,
cart,	granite,	rattles,	but,	loudly,	etc.,
etc.,	etc.,	etc.,	and,	etc.,	etc.

Mistakes will be made in classifying. The question *why*, which it is necessary for the teacher to use in making changes, obliges the pupil to think over anew, the process of learning his principles; his mistakes assist in his future work.

5. Continue the lessons suggested by direction 4, into sentences, taken at first from easy readings, but afterwards, from readings of increasing difficulty. The end aimed at is to enable the pupil to readily classify abstract terms, and the various figures of speech that he meets in his reading.

Read the following extract and classify each word in it, and I think you can appreciate of how much value the series of lessons suggested in this example are to a student. The experiment, I think, will also help to make clear to you the steps you ought to take in leading your pupil to the end.

"Meanwhile
The sun in his setting sent up the last smile
Of his power, to baffle the storm. And behold!
O'er the mountains embattled, his armies, all gold,
Rose and rested; while far up the dim airy crags,
Its artillery silenced, its banners in rags,
The rear of the tempest its sullen retreat
Drew off slowly, receding in silence, to meet
The powers of the night, which now gathering afar,
Had already sent forward one bright signal star."

LORD LYTTON.

EXAMPLE III.

PROBLEM: *To teach the principles that determine the properties of words.*

I read in my grammar when I was a boy, and recited to my teacher, "*To nouns belong the following properties*; *Number*, *Gender*, *Case and Person*. I think I learned it towards the end of my school life, but it was a great burden for me to wait on the knowledge, because I had to remember all those years ever so many definitions founded on that piece of dictated wisdom. If I had been led at the outset to assimilate the

knowledge it formulates, both it and the principles underlying the definitions would have been a part of my *being*. I would have had nothing to remember, no load to carry.

Here is exactly a parrallel case for you to consider, in order to understand why I ask you to give the lessons embraced by the directions I shall presently present; the case is this, A man can walk all day and not feel fatigued from carrying his *head* on his shoulders, but he soon tires if a *book* weighing much less than his head lies on his shoulders; why is it?

1. Make a list of all the nouns from a reading lesson. Let the pupils select them. Take only those that they name, for it is these only that they are competent to compare.

It may happen that a class are not good readers; in that case it would be better to begin the work by taking the list from sentences *descriptive of their own experiences.*

For Number.	*For Gender.*	*For Case.*
horse, oxen,	*man, house, girl's,*	*desk, hat, dog's,*
house, whips,	lion, garden, cow,	cow, lion, girl's,
tree, stoves,	sun's, yard, woman,	stoves, house, sun's,
etc., etc.,	etc., etc., etc.,	etc., ets., etc.

It is apparent that the same word will appear as many times as there are properties in your scheme. The attention of the pupils must be drawn to this fact.

3. Repeat this work of classifying with other lessons, until the children do it readily.

4. The demand for names for the classes having been established, deduce general principles, thus:

(*A*) Some nouns are used to name single things.

(*B*) Some nouns are used to name more than one.

(*C*) Some nouns are used to name male beings.

etc., etc., etc., etc., etc.

From these laws as a guide the pupil will be able to define, *Masculine Gender, Neuter Gender, Singular Number, Nominative Case, etc.*, as you name his classes. By comparing the laws for his separate cases' numbers, genders, etc., (under your guidance,) he will be able to perceive their resemblances, and thus arrive at the generalizations underlying *Case, Number, Person*, etc.

2. Lead the pupils to recognize the *differences* founded on the prinples underlying the various properties as they appear in the objects named by the noun, or in the use to which the noun is applied. This you can readily do by questioning, thus; *Man* names one person; what does women name? *Horse* is the name of a male animal; what is cow the name of? *Stove* is used as the subject in this sentence; how is *house* used in that one? etc., etc. When you have found type words for the *differences* which your scheme of properties (accidents) embraces, write the types as below, requiring the pupils to classify all the nouns selected under the types by their *resemblances* to them in use, or in concrete realization.

Proceed in exactly the same manner to the development in the pupil's mind of a knowledge of the accidents belonging to *Verb, Adverb, Pronoun, Adjective, etc.*

Example IV.

Problem: *To teach the principle* (how) *for parsing.*

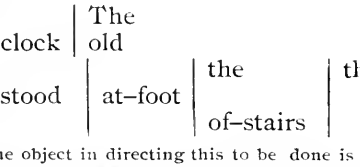
Parsing notwithstanding the abuse it is receiving from critics, and notwithstanding the purposeless work done in it in many schools, is a healthful exercise if enough of it is done.

Its purpose as I apprehend it, is to cause the definitions and other laws of grammar to sink into the automatic. To produce this effect a great deal of parsing must be done by the pupil. The pupil who is proficient in the art, can parse a sentence as he reads it, at a glance.

Unless a teacher intends to give his classes this proficiency, he ought not to have them parse at all, for it is not the ability to solve points in dispute among grammarians that we should seek to give our pupils, but the power to see rapidly the points upon which all grammarians are agreed.

The following directions are based on the theory that written parsing should be used till exactness is secured, and forms made automatic, and then oral parsing takes its place. When analysis has been learned so well that the pupils are about prepared to drop the diagrams, and when the definitions have been presented, (not necessarily learned,) is the time to commence parsing lessons.

1. Diagram the sentence you wish to parse, the pupils copying, thus:



The object in directing this to be done is to utilize the knowledge which the pupils have of relations from the analysis, which relations are the same in the parsing lesson.

2. Arrange the words in a vertical column on the board. Have the pupils do the same on their tablets. Question out from individuals the points you intend your parsing lesson to notice. Record the answers on a line with the word, using abbreviated forms of the answers. As the record is made on the board, have it copied on the tablets. Question thus: What part of speech is *the*? What kind of an adjective? What noun does it limit the meaning of?

Below is shown how the parsing of the sentence would appear when completed.

The	*old*	*clock*	*stood*	*at*	*the*	*foot*. *etc*.
adj.	adj.	n	v	prep	adj.	n
l	q	c	ir	stairs	l	c
clock	clock	n	in		foot	n
		3	ind			3
		s	p			s
		N	3			C
		stood	s			at
			clock			

Usually the initial letter of an answer is a suitable abbreviation, as it does not often happen that there can be any confusion when one form is followed.

3. When the written parsing is completed, have it recited orally. After a few days practice, it is a good plan to erase the whole work of a lesson and have it reproduced by the pupils to be inspected before the next lesson is given.

4. Continue with the lessons day after day, until the forms have become automatic, and until the pupils have learned the definitions, that decide answers so well, that they can dictate the parsing without questions from you.

5. Next, give sentences to be brought to the class, parsed in full on slates or tablets. Have these recited orally. Direct them to omit the parsing of any word in a sentence that you think many of them cannot parse. Question out the parsing of these omitted words at the recitation.

6. When the pupils can and do bring their lessons without mistakes, drop the written lesson, and continue parsing orally. It is well though to give always one sentence

to be prepared at home in writing, and brought to the recitation. This insures retention of forms and diligence in preparation.

7. Gradually increase the difficulties in the lessons, dropping off the parsing of words, the parsing of which has become so easy, that it is done automatically.

CHAPTER VIII.

ILLUSTRATIVE LESSONS. GEOGRAPHY AND HISTORY.

GEOGRAPHY.

I have already expressed the opinion that "to educate a boy in geography, is to insure him a living."

To make this clear, I think it will only be necessary for me to ask you to reflect on the history of wealth accumulation in this country for the last fifty years. Ask yourself who among your acquaintances have been successful? Who have failed to grasp the situation? Are not those who have learned Geography as it should be learned, the successful ones? Are not the unsuccessful those who have failed to learn about the earth, and the multifarious laws of trade?

It is from Geography that a man gets his data for deciding all problems growing out of the struggle for life, which is imposed upon him by nature. How can he best be inducted to the necessary knowledge, is the the question I wish to illustrate by the examples which follow. Suffice it to say that, that knowledge must come to him almost wholly through atlases, texts, pamphlets and other printed matter. How to make these mines of precious treasures yield there golden information, is the problem for the teacher to solve. I shall give the results of my experience under three examples.

EXAMPLE I.

PROBLEM: *To teach the principle* how *for getting information from a map.*

I wish to put on record here before proceeding to give the directions for this exercise an opinion I hold, which is this: There is no subject in the whole curriculum of school studies in which there is poorer teaching done than in geography. And it is not alone among the lowly that inefficiency is found, but many of great reputation show dense ignorance in what they say on this subject. Whenever I hear a great (?) teacher making fun of sand maps, and talking wisely about geography being a mere matter of memory, or advising "essentials" in geography, I mark him down at once as ignorant or pharisaical.

I have chosen for a problem one of the first working principles a child ought to learn. I think now, even after this animated prelude, that I shall fail to convince the majority of my readers, because they can not see the difference between *saying* and *thinking*: "A map is a representation of a part or the whole of the earth's surface." Unless one does *think* the truth stated above he is helpless for getting geographical knowledge.

1. Have your class to observe a limited portion of the earth's surface *with a boundary to it*, as a field, a farm, a district, etc., etc. This observation ought to be thorough.

For once, at least, the class ought to walk out and view the ground in company with the teacher. In other repetitions the memory of those who have been over the ground may be utilized in gathering the data. Measurements ought to be made, both vertical and horizontal, and angles and meanderings of streams, roads, fences, etc., ought to be noted. Products and other features of the section ought to be listed. In short, full data should be gathered of the portion of earth it is intended to represent. It will be better not to tell the children what you are taking the walk for, and why you are taking so many measurements, and making them notice so many things. When you begin making a map of the ground with them then they will know, and they will also know what to look for when you ask them to get the data for another map.

2. After the data are collected for the first map, which is a field perhaps, agree upon a scale and proceed to produce the outline on the blackboard and also upon the floor, if you have no molding board. Let each child produce the same on his slate or writing pad or sheet of drawing paper. Continue till the map is completed, using the conventional signs used by map-makers to mark bondaries, streams, etc. Work altogether, using sand in constructing the relief map.

3. Continue map-making from data that the pupils have gathered under your directions, till most of the conventional signs used in map-making have been brought into use. It will be found that the children will then be able to tell what a map is; they will be in possession of the principle, and can get information from maps.

4. It would save much time for the pupils, and add to the certainty of their information if the teacher should procure a set of relief maps of continents. These can be made easily out of paper, pulp, or putty, or other plastic material. Read what your Geography says about South America with a relief map before you, stopping after each paragraph to verify the statements made, and you will readily see the truth of my observations above.

Example II.

Problem: *To teach the working principle for getting information from the text.*

The cream of geography is in the descriptive text, and yet go into a school room when you will, the chances are nine in ten that you will find the teacher feeding the children on the skimmed milk of map questions. Under such a regimen as this, is it any wonder, that Chicago has a place as a black spot only, in the minds of so many American boys, and that fertile Kansas is but the border of the "Great American Desert," to many middle-aged men of to-day.

Geography is hard reading, but to one who knows how to read it, it is far more fascinating than the stories of Aladdin and Sindbad, because it is a romance of realities.

My love for geography was inspired by a teacher from "Down East," in whose hands it was my good fortune to be placed for five months, when I was about 10 years old. Hubby was a lazy man, and his methods were those of a lazy man, so the people said, for he let us recite our geography "on the book," and he told us such delightful stories of the wonders we read of in our geographies. But I enjoyed Hubby's method, and I never

tired of reading again the delightful stories that lay in such prosy lines, as:

"London contains more than a million of people."

"In France the people spend a good deal of their time out of doors."

After Hubby had dropped out of my life, the habit of realizing what the dry recitals of geography contained, remained with me; *I had learned how to read the subject.*

Since I have been a man, I have traveled about a good deal; I have stood on the shore of the Atlantic; I have crossed the great lakes; I have stood on the bank of the great Mississippi; I have listened to the roar of Niagara; I have crossed the Alleghanies; and I have seen New York. But all these I had seen and knew before I visited them.

I have taken Hubby as my model in teaching geography. By following the directions below, I think any observant teacher will soon realize the great power the method has for arousing and sustaining interest in what I regret to say is a tiresome study to children.

(A) Assign no lesson in advance —at least for some months—but spend the time you have for recitation in reading *with the children*, sentence by sentence, and paragraph by paragraph, the story as it is told in the text.

The actual necessity of the *living* teacher co-operating with the pupil in clothing the words with life, will be apparent to any one who shall set the task below for a ten year old boy to master unaided, and who shall then patiently examine and find out how much he has learned.

"Kentucky is about half the size of Kansas. Its surface is mostly hilly, and slopes towards the northwest. The southeastern part is mountainous. In the production of tobacco, hemp, and flax, Kentucky surpasses every other state in the Union. The "blue grass" region, in the basins of the Licking and Kentucky rivers, is celebrated for fine horses. Louisville, at the falls of the Ohio River, is the most important tobacco market in the country."

To read this aloud so as to be understood by the teacher, to answer a few questions in the terms of the extract, is not to realize what it tells.

How big is Kansas? Where is it? What is a hilly surface? How does it differ from the surface in view from the window? What means mountainous? How high are those mountains? How does tobacco look in the field? When is it cut? How prepared for market? Name something made of hemp? Something made of flax? Did you ever see hemp growing? Or flax? What is a river basin? Which is larger the Kentucky or the Licking? How did these rivers come by their names? What is blue grass? What do horses eat? What kind of horses are meant? Did you ever see a horse-race? Do you know how much tobacco is sold in Louisville? And when it is sold? And how? Is anything else sold in Louisville? How large a city is it? What large city have you visited? How does it differ from Louisville? What are falls? How high are the falls of the Ohio? How wide is the Ohio at Louisville?

These questions all touch upon things that one thinks about in reading the paragraph above if he has learned it; can a teacher not assure this concept by telling the stories to the children when his questions fail to get a response? Hubby would spend a half hour on such an extract as this, and send us home eager to read our book, and find other entrancing pictures for ourselves.

(*B*) After the text treating of a continent or country, or state is read in the manner outlined under direction (*A*) above, review it by such an outline as is shown below.

MEXICO.

Vera Cruz–Rio Grande–Plateau–Cortez–Indians–Spain–Gen. Scott–California–Cochineal–Cactus–etc.

Prepare this outline by requiring the children to name something that Mexico makes them think of. As the names Vera Cruz–Rio Grande, etc., are given, put them on the board. Encourage every one to think of something. When the "thoughts" are all down, inquire "why," and the stories will come forth in abundancee. Let each child write a composition on Mexico for you after this review. This review serves the double purpose of associating the facts about Mexico in the mind, and of causing the child to read again what has now become a delightful story to him.

(*C*) After many countries, states, etc., are read consecutively, and reviewed as indicated above under direction (*B*), inaugurate similar reviews on such topics as *Cotton*, *Rice*, *Tobacco*, *Codfish*, *Prairies*, *Selvas*, *Beeves*, *Gold*, *Coal*, etc., etc.

These reviews will serve to associate the things reviewed with all the places concerned in their production, transportation, manufacture and consumption.

HISTORY.

History tells of marching armies, of plains and mountains traversed; of men and women, of their trials and triumphs or disappointments; of policies and parties; of changes produced; of ideas and inventions, of their spread and development.

The *objects* brought under observation by a series of history lessons, since they are but the acts of people "of like passions," with the youthful reader, can be made the means by skillful teaching of inducting that reader, by comparing them with his own acts under parallel circumstances into the possession of many correct ethical concepts. A course in history is therefore a useful training for citizenship. Moreover as its events are all in the past, and have to be pictured by imagination to be realized, it affords the best, the only other field being that of mythology —for disciplining the retentive power of the intellect.

I shall present the subject by giving directions for teaching two working principles.

EXAMPLE III.

PROBLEM: *To teach the principle* (how) *to get information.*

Geography and History are so related, that the one exactly complements the other. In presenting the principle "how to get information," in geography the teacher's part in filling in with the *stories* to adorn the *skeleton* outlined by the text, was shown. In history the case is exactly reversed, the text gives the *stories*, and the teacher's work lies in supplying the *skeleton*.

By his aid the pupil must be led along with the marching armies; he must see them in camp, and hear the neighing of war horses, and the rumbling of army wagons. By the teacher's good offices the pupil must be made acquainted with the men and women of the story; he must see their faces and dress, and hear their voices; he must go with them to and fro on their journeys. Roads and cities must be rebuilt by this clever workman, and old armor be burnished anew. By the power of this kind

genius. the pupil must be transported from the "now" into the "then" and *live* the scenes he reads of.

(*A*) Read with the children the paragraphs of the lesson for the day. Question upon the text so as to lead to clear concepts in the mind of the pupil of the time, place, and people mentioned. For instance suppose this to be a reading: "While these stirring events had been going on in the Shenandoah Valley, McClellan had pushed his left wing across the Chickahominy. A terrible storm had flooded the swamps, turned the roads to mud, and converted the Chickahominy Creek into a broad river. Johnson seized the opportunity to fall with tremendous force upon the exposed wing. At first, the Confederates swept all before them, but General Sumner throwing his men across the tottering bridges over the Chickahominy, checked the column which was trying to seize the bridges and thus separate the two portions of the army. General Johnston was severely wounded. Night put an end to the contest. In the morning, the Confederates renewed the attack, but the loss of their general was fatal, and they were repulsed in great disorder."

Question upon it—during pauses in the reading—supplying the information when the children fail to respond, as follows:

What are "stirring events?" What stirring events are alluded to? Where is the Shenandoah Valley? How far away? In what direction? Who was McClellan? What rank had he? How came he to be appointed? What is meant by "left wing?" How did he "push" the left wing across? How many men were in it? How long did it take? Was it done at night? How large was the Chickahominy? How far apart were the two wings during the flood? Who was Johnston? How many men had he? Where were they? What would you have done under the circumstances? Describe his "falling with tremendous force" on the exposed wing? What were they exposed to? Did they know it? What had they probably done? Who were the Confederates? How were they dressed? Describe their "sweeping all before them?" How far did they "sweep" the field? Who was Gen. Sumner? His rank? How did he command the left wing or the right wing? Describe his "throwing his men" across? How did he "check" the column? What is a column? What was this column trying to do? Where was the attack made the next morning? Why did they wait till morning? What was probably being done on both sides during the night? Where was Gen. Johnston? Did his men know of it? Did he die from the wound? Describe a "repulse in great disorder?" Why did McClellan not take advantage of the disorder? What is the name of this battle? Why so called? Describe the face of the country? Draw a map of the battle field. Locate the armies before and after the battle. What were the losses? Date of the battle?

It may be objected that my questions are too exhaustive. It must not be supposed that I claim that this must be done every time. I used the questions with this extract to illustrate the whole details of skeleton-making; if in descriptions of other battles "left wing," "pushing across," "throwing across," "falling with tremendous force," "repulsing in great disorder," have been pictured adequately, there would only be a waste of time in repeating them here. The teacher ought always to know what details need illustration.

(*B*) After the reading of a cam-

paign, an administration, or any definite portion of the text, which in itself constitutes a complex unit of the whole narrative, is finished, conduct a review of it as follows: Write the title on the board and ask the children to name other events, persons, places, etc., that are associated with it in their minds. Write these also on the board, and when the associations are all recorded, have the whole story repeated as these associations recall it.

A specimen of what might be the board work of a portion of Polk's Administration, reviewed is given below.

WAR WITH MEXICO.

Gen. Taylor–Gen. Scott–Santa Anna–Rio Grande–Palo Alto–Monterey–Capt. May–Buena Vista–Capt. Bragg–Vera Cruz–Cerro Gordo–Puebla, etc., etc,

(*C*) Reviews of larger devisions of the text can be based upon the prominent men mentioned, or upon historical places. The associations for the review work can be gathered in the same manner outlined under direction (*B*). Below are appended specimen topics for reviews of this character: *Washington; Grant; Jackson; Richmond; Washington City; New Orleans; Slavery; Texas; Paper Money;* etc., etc.

The effect of giving the lessons as directed under (*A*), is to cultivate a habit in the child's mind, of demanding complete and correct concepts from his reading. This demand will form in him the habits of investigation and inquiry. The effect of the reviews (*B*) and (*C*) will be to cause him to know that all details are connected in a historical narrative, and this knowledge will form the habit in him of reflecting upon each isolated statement, considering it both as effect and cause; it tends to cultivate in him the power of making correct judgments upon the credibility of opinions advanced by the author.

EXAMPLE IV.

PROBLEM: *To teach the principles of retention and recollection.* (Rules for remembering and recalling.)

That one remembers and recalls faces, names, and events by rule, I feel sure. But because the rule is applied automatically, many people are unconscious of its existence. In the directions given below, I follow the theory that a time, a place, a person, and a thing, (action) being associated, there is formed a concept, which is more apt to be recollected than if it wants one or more of these essentials. Moreover such concepts being complete, attract the retentive faculty and are put away carefully, just as a child under a natural impulse picks up the prettiest pebbles.

These associations every mind makes unconsciously, more or less as his experiences have developed the principle with him. It will make the principle conscious with him after a while, if the associations are voluntarily suggested by his teacher.

1. Have the children fill out such tables as are presented below, you supplying the dates at first, and at repetitions supplying the places, the persons, or the events. The work for some time ought to be conducted as a class exercise. As the power *to do* develops, it may be changed to a seat exercise.

DATES.	PLACES.	PERSONS.	EVENTS.
March 29, 1847;	Vera Cruz;	Gen. Scott;	Capture of Vera Cruz;
April 18, 1847;	Cerro Gordo;	Santa Anna;	Defeat of Mexicans;
Aug. 7, 1847;	Pueblo;	Scott's Army;	Resumed march to Mexico;
Aug. 19, 1847;	Contreras;	Scott, Santa Anna;	Battle 14 miles from Mexico.
Sept. 8, 1847;	Chapultepec;	American Army;	Storming and capture of Fortress;
Sept. 14, 1847;	City of Mex.;	American Army;	Occupation of City.

2. Repeat the work till the habit is formed of making associations naturally in reading. The growth of the habit will be shown by the readiness the children display in supplying the data for the reviews recommended under (*A*) and (*B*) in the last example.

CHAPTER IX.

ILLUSTRATIVE LESSONS. ARITHMETIC.

THE instruction generally given in school in Arithmetic, is based on an agreed definition for number. Now when a child repeats this definition, I do not believe that he understands the principle underlying it very often. Indeed I have known scores of teachers who did not comprehend it. The fact is that nine chidren out of ten, counting the whole country, are started wrong. I read with a shudder, a few days ago in the very latest, and highest authority on arithmetic teaching: "The first thing children ought to be set at is counting." The author went so far as to advise counting *without objects*. He said it was "easy to learn." And so it is we all know, but such teaching parallels exactly the practice of spelling through the "Blue Back" before taking up reading. Children in the one case learn to call words without thinking of the meaning, they become shallow readers. In the other case they learn to read numbers, and to perform operations in them without attributing value to them; they are crippled in their development.

I favor going back of the definition and giving first the knowledge upon which it is founded. That knowledge is an assimilation from perceived facts; it comes through attrition with numbers, it is born when the learner perceives that there is a resemblance common to all numbers. This resemblance which is "made up of like parts," needs a name to its discoverer. If given before the demand for it is born in his intellect, the chances are that he will never discover what a number is, though he may cipher his way up to the calculus.

Inasmuch as an entire number of this series is to be devoted to arithmetic. I will present only one example to show how the pupils may be led to the assimilation of a working principle.

EXAMPLE I.

PROBLEM: *To teach the identity and variety of numbers.*

If I were to ask you to tell me the points of identity between two *men* that you had never seen, could you not do it? And could you not also tell many points in which they would probably vary? Could you not also determine the conditions (all of them) in which they should agree in order to be exactly alike? Now if you can do this for A and B, two *numbers* that I have in mind, you are prepared to understand what follows, if not, you had better consider closely the following questions, so as to be able to give the lessons with profit to your children. Why are two objects called *men*? Why are two others called *numbers*? The answer in both cases is because they have *essential* resemblances. The essential resemblance in numbers is that *they are composed of things* (units) *that are alike*. The first thing I like to do with children then, is not "to

set them to counting," but to bring them into contact with numbers, and lead them to discover through the natural operations of their intellects, the properties of numbers.

Following the directions below will assist materially in giving the proper start, because they question the intellect from the beginning.

1. Ask the children under instruction to make with jack straws, on their desks some figure of which you give the copy on the board, thus: □

2. Question upon the resemblance between John's and James' figures. It is possible to get *all* to perceive that they are alike. Many will see the resemblance or rather that they ought to resemble even without seeing the other children's figures.

3. Have each child to make a bundle of his straws, then question as to the resemblances of the bundles. It is possible to get all to decide that the bundles are the *same*. When pressed for an answer children will say "no bigger," "same size," "just alike," etc. They are feeling even now the demand for the word *number* to express the resemblance they have perceived.

4. Practice the same routine with *teepees*, *triangles*, *crosses*, *stars*, *ladders*, etc., etc.

5. Have one section of the children make *triangles*, another *stars*, another *ladders*, etc. Dissolve the figures into bundles. Have them to find bundles (numbers) that are the *same*. And that are *different*. And to find two bundles that put together will be the *same* or *different* from another. Have them to determine whether one is *more* or *less* than another.

All this work so far must be done without counting. I think you would know that the straws in a *teepee* put with those in a *square*, are the same as those in a *ladder*, by *perceiving* and *comparing* alone. Why not allow the children then to get similar facts through their experiences rather than *through testimony*, as counting for a proof always is.

6. By the time this much is done, children ought to be accustomed to use the term "number" that you have introduced, to name what they designate as "bunch" or "bundle." Now lead them to compare the numbers they have dealt with by proper questions. You can easily get them to observe that there is as great a variety in numbers, as there is in children. And that a number is no longer the same when you remove a straw. And that one can be made the same as another, by putting straws on or taking them off.

7. Continue the practice of these six directions, with other objects than straws, until the idea of number is made generic in their understandings.

8. When you perceive that the *demand* for names, for different numbers is clearly established with them, proceed to teach them to count the numbers *in order to find the names*. Extend the counting instruction to embrace counting not only by *ones*, but by *twos* and *threes*, and *fours*. This cannot of course all be done at once, it is only after they know that 1 and 1 are 2, that they are prepared to count by 2's; so until they know by experience all the ways 3 can be made, they are not prepared to count by 3's.

9. Induce the children to make two numbers that are not the same identical. by putting straws to the smaller, or by taking straws from the larger. Manage the exercise so that the name of the number is not apparent at a glance. After

they have agreed from observing the manipulation that they are the same, count one and find its name. Then ask for the name of the other. Hold them in observation till they can give its name confidently without counting. Write results thus:

8 straws. 8 straws.

They will know that they are the same, and will say if you question them; "8 *straws* is the same in number as 8 straws." Write this answer in full.

Now use straws and marbles and make two numbers the same. Write results:

8 straws. 8 marbles.

Compare the two results and get their opinions of both. You will find that they will perceive that the first 8's are alike in kind and number, while the second set are alike in number but differ in kind. Adopt the sign = to mean "the same in number and kind," and write: 8 *straws* = 8 *straws*.

10. Continue with the same practice with other numbers, until the principle that two numbers are identical only when their parts are the same, is firmly fixed in their minds.

11. Extend the instruction to such results as:

5 *straws* = 3 *straws* × 2 *straws*.

This is best done by making two identical numbers according to previous directions, and then separating one of them into parts, developing the sign × to mean "put with." The result above is understood, thus: 5 *straw is the same in number as* 3 *straws put with* 2 *straws*.

12. Continue this practice till the facts of the addition table are discovered by the children.

I would advise learning only to 10.

CHAPTER X.

FORMULATION OF PRINCIPLES FOR TEACHERS.

IN this series of chapters those who have read them attentively will remember that I first tried to get my readers to understand what I meant by the term, principle. Next, I brought to their attention the fact that the human mind is organized to act according to principle. In other words, I claimed that man is not an imitative animal by nature, but that he acts in all things in obedience to an intelligent will, which stands above his physical being and directs it. Furthermore I discussed the functions of a principle in the abstract in its relations to life, and investigated the process of the formation of working principles (the "I must's" that govern our actions). Commencing with the fourth chapter and extending through to this, I have given a method for engrafting certain working principles upon the minds of pupils. Many examples were given in all, embracing in their scope teachings in arithmetic, in grammar, in geography, in history and in language.

I wish to devote this chapter to a study of the practical lessons given by outline with a view of deducing a few general "I must's" for the teacher's guidance. I ventured to hope in the outset that many of my readers desired "to teach by principle," and not to experiment. I have lead them thus far and have as yet formulated nothing for their guidance. Why? In the second chapter I said, "No one can tell another a principle."

This I believe firmly, and hence I have diligently toiled to construct *an experience* for them through which they might be able to grasp the thought of what I shall at last have to put into words. Words and sentences are but platitudes if they do not arouse to thought and action. I could have written out the principles at the beginning, but I knew they would be meaningless to nearly all my readers without an experience. I have tried to make that experience what it should be by asking you to conduct certain experiments with your own minds, and with classes of children. If you have done this you are prepared to enter upon the study with me.

Presuming that all understand that it is the *intellect* of the the child that is to be guided by teaching it, I would call attention to the following facts:

The intellect can (1) recognize objects, (2) observe their resemblances and differences, and (3) retain its observations as separate objects.

These powers I wish to name (1) Observing, (2) Comparing and (3) Assimilating.

A man sitting in a chair wills to rise. He leans forward and brings his feet beneath him as preparatory movements before he rises. These preparatory actions while we can name them and think of them separately, are essentially a part of the *rising*, and the latter can not be perfected without them. In exactly a parallel sense I wish you to understand the acts named above. "Observing" and "Comparing" are essentially parts of the act "Assimilating." The analysis thus considered reduces the answer to the question, "What can the intellect do?" to one brief statement, viz: *It can grow like a tree.*

But it is admitted that all our knowledge (intellectual growth) comes through our senses. How? A physical object comes before the physical eye behind which is an intellect. That intellect (1) recognizes it as an entity, (2) compares it with others it is holding as thought-objects, and (3) puts it in its proper niche. This is the process by which sense-objects become thought-objects. Thought-objects are the very substance of the intellect. This substance is constantly being added to by the action of the senses, bringing in new substance from the world around, and *by the self-growth of the intellect assimilating new thought-objects by comparing the atoms of its own growth.*

It is perfectly clear then that the mind, feeding upon nature and upon itself, has no limit to its growth.

In teaching, then, you are nourishing immortal souls, the law of whose being is to grow, ever expanding but never attaining unto the Infinite, who gave them being "in his own likeness."

This much of psychology has seemed to me necessary to make the explanations I shall give further along, perfectly apparent and to secure your comprehension of the first principle I formulate for you:

To teach is to induce the intellect to add to its substance.

All teaching, then, must begin with sense-objects, since these must be transformed into thought-objects before growth has been attained. A sure test of whether a sense-object has been transformed into a thought-object is to see it without seeing it, to hear it without hearing it, or to touch it without touch-

ing it; or in other words, to imagine it. If one has the power of imagining a sense-object, then he has a thought-object corresponding to it. This, in common parlance is called remembering it.

Now refer to the examples given. In every one of them you will observe that a number of sense-objects or thought-objects were taken as a basis. These were selected as having the principle desired to be assimilated as a *resemblance* extending through the group. That resemblance when expressed in words becomes the principle desired to be taught. The teacher by his questions or actions must manage to get the pupils (1) to observe the several units composing the "whole" or group of objects, (2) to compare them with the end (in his mind) of having them to discover the resemblance. When they have discovered the resemblance, the principle has been assimilated. In the spelling exercise, for instance, it was recommended to take an action (sense-object) and another resembling it, and another, and another, all resembling the original one.

This principle of repetition is an old one in educational literature, but it has been dreadfully misunderstood. It is a common practice to have children write the *same* word (form) ten or even fifty times in order to learn the spelling; and children in free America are made to recite tables and definitions Chinese fashion in order to remember them. Such repetitions stunt growth rather than promote it, because variety (it takes two things at least to be able to make a comparison) is the nutriment of the intellect. Repetitions must be of *one* thought (resemblance) in a variety of dress (sense-objects or thought-objects).

It was recommended to name the actions as they were recognized, (1st step) to compare them (2nd step). This was done by varying the action slightly each time, thus forcing the pupils to keep the resemblance prominent. This resemblance (*walking* in the example given,) would become a thought-object, and all other resembling actions illustrated would be associated with it. Its meaning would become generic. The assimilation (what the pupil would retain) from this lesson, would be "how that word was learned." This becomes a thought-object. Each succeeding lesson being *like* the first gives another thought-object. The whole series of lessons constitute another "whole" through which the intellect by observing the resemblance extending through them, assimilates (makes a rule) for learning the meaning of words.

All the lessons follow the same general plan, i. e., of making a group or "whole" as a basis for the instruction given. Read them over and you will be able to find the units of each "whole." They are sometimes numbered 1, 2, 3, etc., and again as *a*, *b*, *c*, etc. In most of the examples as in the spelling alluded to above, the lessons day after day form a "whole" for a higher assimilation.

These remarks make it clear that:

PRIN I. *It is through a "whole" as a medium that the intellect assimilates any and every truth.* Therefore, if you teach the intellect at all, you *must* arrange groups for comparison.

* * * * * *

Compare the nine exercises given, asking yourself why it is necessary to form a "whole," i. e., to do the same thing over and over.

Why it is necessary to coax out of the children day after day, a story [see example—under Language] that you have in mind? Why not tell them at once how to write a sentence, how to plan it,

how to do everything in fact. This is the old way that has made composition such a failure in schools. Try the *telling* plan—I dare say you have already tried it—and learn that failure is inevitable. Every one of the examples recognizes the fact that *telling* a principle is impossible. Every one of them is planned to produce a gradual growth commencing in *unconsciousness* at first, and ending in conscious recognition of the truth. Every one of them recognizes the binding force of:

PRIN. II. *All intellectual acts are at first unconscious.* Therefore if you teach according to principle, you *must* refrain from telling your pupil.

* * * * * *

Many who have read these articles and who have been able to make the comparisons I have suggested, and to endorse both principles above, will yet fail to apply the system I am unfolding if they fail to see certain other principles that are likwise discoverable in them.

Compare these lessons now with the view of discovering the motive operating upon the pupil in each case when the truth dawns upon him. In every case it will be found that the pupil in his work is moved to action by an impulse which is pleasing to him, and which is in no degree related to the end he reaches.

In Example 4, Chapter VI, day after day he is telling things that he has been led to discover in pictures, totally unconscious of his teacher's motive, which is to *have him learn how to do what he is doing.* In Example 5, Chapter VI, he tells what he sees at various times in forms before him, delighting to do it because his senses and his mind are thereby employed, unconscious of the teacher's aim, which is simply to lead him to discover how to describe objects. In all the examples the same observation can be made, the same plan is apparent. From this comparison I conclude:

PRIN. III. *Assimilation of truth is a self act.* Therefore, if you teach correctly, you *must* allow your pupils to think for themselves, not suggesting the end you are aiming to reach with them.

Again, comparing these lessons with the view of ascertaining the exact status of the pupil's mind when the light bursts upon it, that is, when in answer to the question "why," he is able to put into language any of his observations, you will find that the thrill one feels at first sight of Niagara Falls, or any other great work of nature, pervades his answer. His emotion of surprise in discovering that he knows a truth, really, is paralleled by the feelings of one who finds a diamond in a desert waste.

These observations lead to the following, which are corallaries of Prin. III:

PRIN. IV. *Assimilation is controlled by the environment.*

PRIN. V. *Assimilation is without the domain of the will of the pupil.*

Therefore, if you guide your pupils aright you *must* environ them with circumstances and let them act freely; you *must* throw the truth you design to teach among the pebbles you ask them to sort, and allow them to find it accidentally. It was thus that the telescope and the daguerreotype were invented; it was thus that Watts learned the power of steam, and thus that Newton made his great discovery. Thus, in fact, are all atoms of growth added to every intellect. Blessed is the pupil who has a teacher wise enough to know

this fact, and expert enough to direct his thinking by questions that will lead him along pathways strewn with diamonds of truth.

* * * * * *

Comparing the whole series of Illustrative Lessons with the view of seeing the relations of what the pupil is required to do, and of what he is required to say, while he is engaged learning the "how" of any process it will be noticed that *his* answer to any question is given to describe *his* sense perceptions of the things he has been required *to do*, i. e., observe.

In the spelling illustration the *walking*, *striding*, *marching*, *wandering*, etc., all spoke to him first in nature's language, gave him knowledge, just as the beaming sun upon his head tells him to seek the shade, and just as the gentle zephyr fanning his cheek whispers a tale of sunny glades and delightful reclinings. The written forms introduced by the teacher and made by him, in that act, became symbols of the things observed. In the picture lessons, in the exercises for learning how to describe objects, how to divide, in fact, in every illustration care was taken to have every unit or step of the "whole" make its natural impression on his senses. Each question was designed to bring out the pupil's description of those impressions. Each change in expression to conventional forms was managed so as to get the pupil to adopt the suggested form as the proper symbol for the *natural* language. The natural language and the written form were ever in juxtaposition at the time of the adoption of the latter, one preceeding the other. These observations lead to another principle which is very important for the teacher who wishes to succeed:

PRIN. VI, *Formulation of observations* (spoken or written language) *follows and must be associated with assimilation.*

Therefore, you *must* refrain from allowing your pupils to learn words through the meanings of other words. One can never be certain what meaning may be associated by another mind with a word. It is certain that *neighbor* and *flood* convey very diverse ideas to boys in the city and country respectively. Not long ago I discovered that *instep* meant one thing to me and a contrary thing to a little boy with whom I was thrown. I was once very much surprised to find that a boy in my history class thought the British had burned three or four *buildings* at Concord, he having read of their burning the *stores* there. A little girl who had written "My mother *ejaculated* the dishwater," was asked to explain. She turned to her defining book and pointed to the meaning. There it was: Ejaculate; *to throw out.*

Nothing is more certain than that every word has an idea differing from every other word. If two words in time come to mean exactly the same, one will live and the other become obsolete. There is no such thing as "a definition in other words." Each word signifies a something different from every other thing, and hence defines itself.

If the principle above was strictly observed by teachers the next generation would all hear alike and would all get equivalent ideas from their reading. The stock in trade of controversialists would be destroyed and parties in politics and religion would be brought nearer together.

When all teachers do recognize its demands, and literally observe them, (and I am sure they will

some day) the word *demagogue*, which once meant a leader of the people, which now means a leader of *ignorant* people, a dealer in platitudinarian phrases which sound wise, will then be marked (*Obs.*) in the big dictionary, because then there will be no ignorant people who must be led, since every man will be able to think for himself and lead himself.

* * * * * *

Comparing the work of the illustrations, noticing the end reached in each case, and speculating upon the effect the learning of principles *in this way* has upon the boy's character as manifested in his conduct, I think you will discover that he grows in *willingness* to do, in *ability* to do, in *adaptability* to do and in *desire* to do, as he learns principle after principle. Each new truth, as has been noted, comes to him as a precious and valuable jewel which he has stumbled upon. When one finds a diamond he does not throw it away but sells it and invests the proceeds. When Watts saw the lid of the kettle move he rested not till he found the principle and applied it. When Newton saw the apple fall he writhed in thought till he saw the *fixed* stars circling in great orbits. When the watchmaker caught an accidental glimpse of the distant tower he experimented till he perfected the machinery for "seeing afar off." When the little boy learns the meaning of *striding* and of a score of others in the right way, when he has, in fact, assimilated, not memorized, their meanings; when he has an intellect enlarged by this knowledge; how to be able to know the meanings of strange words; he is attentive and watchful, he notes what actions, etc., are named by cultured persons with certain words. This is the rule he has learned to work by; he needs no dictionary. Does he grow in knowledge day by day? Can there be a doubt of it? When a pupil has been taught consecutively the various "hows" of school work, and each has become a thought object with him, and stands ever at the portal of his understanding, eager to serve him as his needs arise, will he not in introspective moments, just as a boy idly counts the marbles in his pocket, pass his treasures in review and discovering resemblances in these various forms of doing, make rules for the "hows" of busy life?

These considerations based upon observations of the effect of the illustrations given upon the after work of the children, and linked with observations based upon the recollections I have of how I learned all the things that I know and *practice*, suggest the following comprehensive truth:

PRIN. VII. *The mind, having assimilated a truth by intellectual action, has an innate tendency to apply it.*

Therefore, if you expect to fulfill the end you ought to have had in view in becoming a teacher, viz., to help the character of your pupils, you *must* so conduct yourself that they shall assimilate and not memorize what they learn.

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